A NEW WAY TO CONNECT TO TRAVEL

Ryan Quast

Figure 1.1

A NEW WAY TO CONNECT TO TRAVEL

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of North Dakota State University

By

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for the Degree of
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Primary Thesis Advisor

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Thesis Proposal

Thesis Abstract

This thesis examines how architecture can make mass transit more accessible and desirable to the public and how the public's wants and needs can improve a transportation center's design. It examines how making downtown areas accessible through public transportation and creating an on-site living population enhances the lives of those that would use the system the most. A key focus is creating a community of these on-site commuters that has ways of connecting to each other, while also connecting with the community around it. This transportation hub and multi-family living complex in the suburbs will also look at enhancing the image of public transportation to that of an advanced transportation system that is safe and reliable.

Narrative of the Theoretical Aspect of the Thesis

In today's modern lifestyle, downtown living has a great many perks to the young with the energy and will to experience all that a major metropolitan center's nightlife has to offer. There are also those that work in these epicenters of industry and business that find it to be the most convenient solution to make their way into the working world by being located as close to work as possible, in order to be called in at a moment's notice if necessary. There's one substantial problem with living in a place like that, everyone else wants it as well. This makes it one of the most expensive places to live in any given state. This has driven many apartment/condo seekers out to the suburbs to stay close to the action via cheap public transportation or long arduous commutes, while also enjoying very reduced rent/mortgage prices.

Not only has this created a large need for more mass transit stations, it has also made living close-by to one of such terminals a high priority for those looking for quick access to the heart of the downtown lifestyle. These transit stations need to be accessible to both of these public transportation users, ones that commute to a transit hub, and the ones (in this case) who will be living on-site to have the most access to downtown. This effect can be seen in many places around the county, but specifically in areas such as the area around the D.A.R.T. (Dallas Area Rapid Transit) in Dallas, Texas. Dallas was ahead of the curve on this trend, and there is much that can be learned from this case (more in-depth analysis below in Case Studies). One of the biggest takeaways from the D.A.R.T. program is that it works, the Dallas area has seen a huge increase in the amount of anti-sprawl currently in the area. People are flocking to the areas where rail stations are being built, and even going to locations where stations are being considered for future use.

There is another part to this design problem, and that is the fact that there are a large number of people that are intimidated or don't know much about public transportation and all the positives it can offer. Another aspect of this project will be creating an atmosphere that makes mass transit a comfortable experience, and not a scary or hidden affair. There's no reason that taking a train downtown has to be something that's hidden, this is an activity that exemplifies what it means to live in a modern era. Taking public transportation to a large metropolitan area is an experience that should be accessible and desirable to every possible user of the system.

Project Typology (Building Typology)

The building typology that this thesis will be using to explore the premise is a transit center with an emphasis on multi-family apartment living close to the center and on the same site. The types of transportation in use at this transit center include both commuter train access and an area for bus lane access. The Northstar Corridor, specifically, is the rail line that will be used, as this leads directly from the Twin Cities (Minneapolis and St. Paul) of Minnesota to Saint Cloud all by train, going through the Coon Rapids- Riverdale Station used by many for quick access to downtown Minnesota's metropolitan centers.

Figure 1.2

Typological Research

The COR
Ramsey, Minnesota

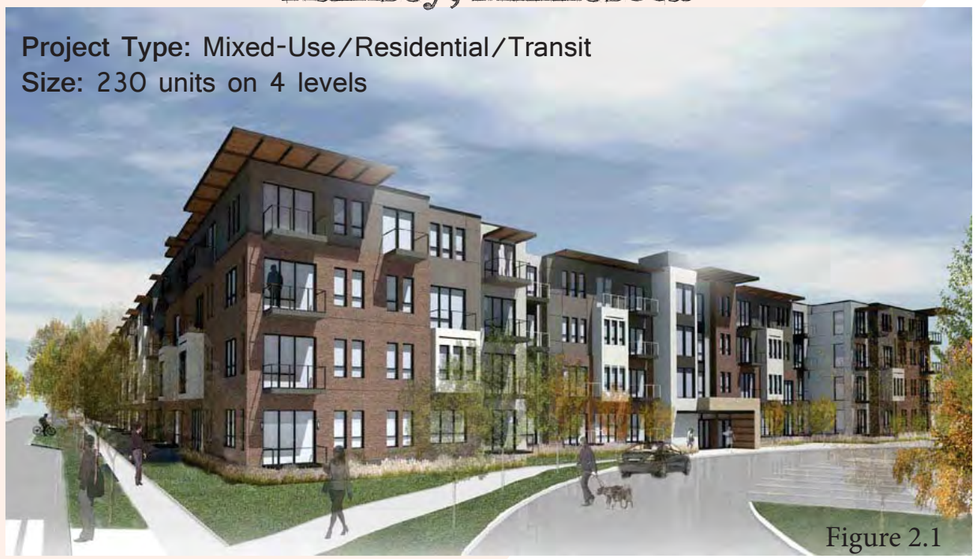


Figure 2.1

The planned COR community in Ramsey, Minnesota is a great case study that follows along a lot of the same lines of thought as this thesis. This was a piece of architecture that was supposed to serve as the center of a larger community of schools, stores, and residences. “The Residences at the COR” is the name of the main focus of this study, as well as the station almost directly adjacent to it. The Residences at the COR were built along the commuter rail lines that have brought in a huge influx of workers into the Twin Cities of Minnesota called the Northstar Commuter Rail. This railway allows people that work anywhere around its many stations, but specifically its downtown stops, to board the train anywhere between the Twin Cities and St. Cloud and get to work in a timely and efficient manner. While the initial intention of this rail system was to have a “Park-and-Ride” type of system where commuters/riders would park their cars at these stations and take the train to work, another way to more effectively utilize public transportation has come into public favor, and that is living right next to or on the station’s site.

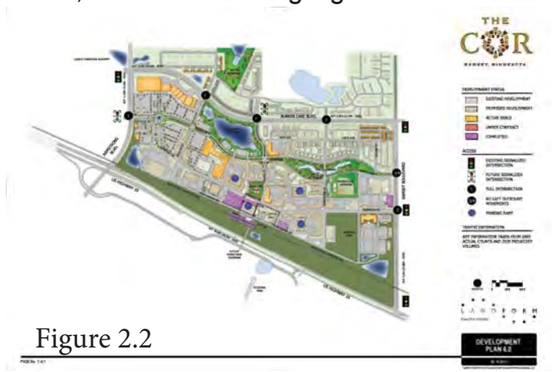


Figure 2.2

Figure 2.3

This concept of residing directly on or right next to these stations has become such a huge hit to its users that the COR decided to build a large, multi-family complex almost right beside the tracks. The idea is that you are able to go almost completely without a car for a lot of your daily living. However, this is where the COR facilities run into a problem. Since the site that they built on was supposed to be developed in the future, but hasn't been because of the economic downturn in the late 2000's, many residents have been forced to live their lives as if they were any other regular suburban resident. A way around this would be to have all of this small commercial development directly on-site and readily available to everyone. One of the biggest keys to a project such as this, however, is a smooth connection between the residences and the train station, which the COR has. This is what people are paying to live in these residences for, to be able to wake up and walk to the train station unhindered by weather, traffic, or other such nuisances to morning travel.

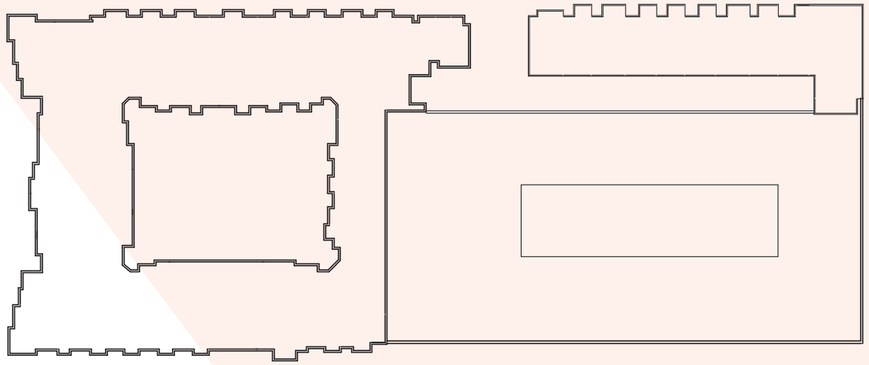
Also at the top of the list of what prospective tenants are looking for in a place such as this is the train station itself. The COR is not only meant for those that live on-site and can walk to the station, but also has a large parking structure that can house the residents as well as those that would be driving to the station. This is why the station, while needing to be integrated into the architecture of the residences, also needed to be a part of the parking structure as well, in order to make it safe and convenient for all users.

In keeping with this philosophy of unity between the building and the adjacent train station/platform, the COR shows that it is necessary to not only have a physical connection, but mental one as well. It is important that these two structures don't appear to be separate entities, but rather one whole piece of architecture used to solve two different needs of its users.


Figure 2.4

Something else that becomes readily apparent to a visitor to the Residence at the COR is the sense of community the interior of the building brings. Everything from the large outdoor/pool space in the interior of the design, to the indoor bike storage for tenants, to group fitness centers, the building was designed to help people meet their neighbors and have an environment to explore with them. While the building itself does provide a bountiful amount of cultural identities for the tenants, a real connection to the outside world seems lost, with no other real development close by, thus requiring those interior connections to be stronger.


Figure 2.5



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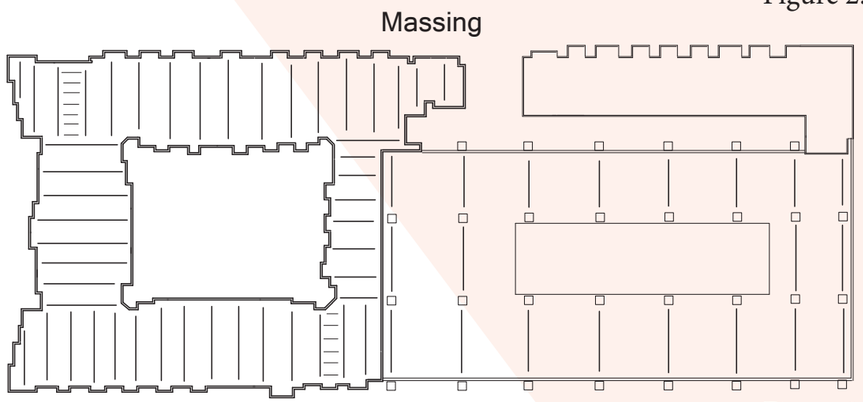
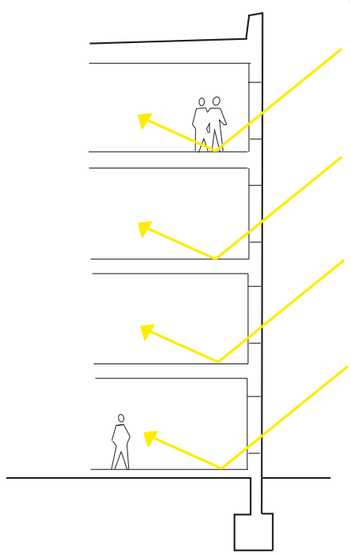


Massing

Figure 2.7



Structure

Figure 2.8

Natural Light

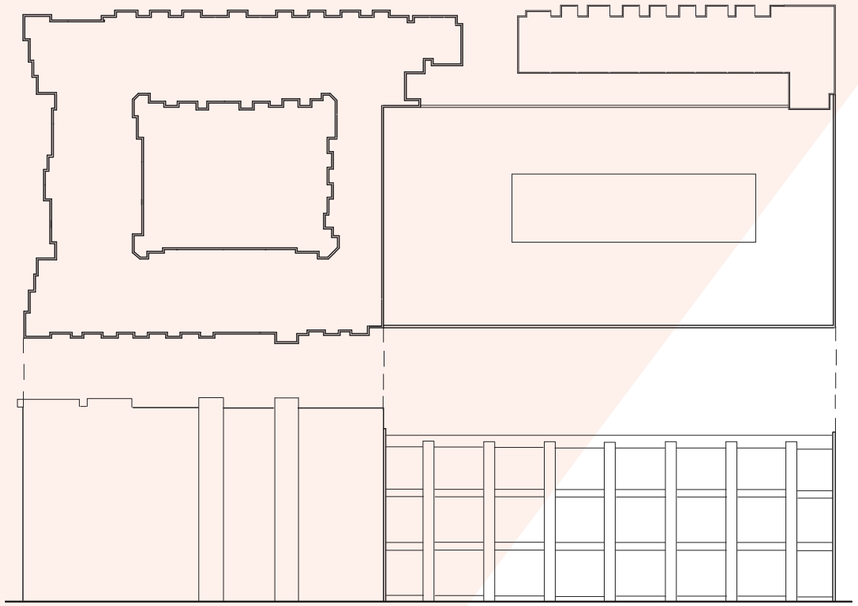


Figure 2.9

Plan to Elevation

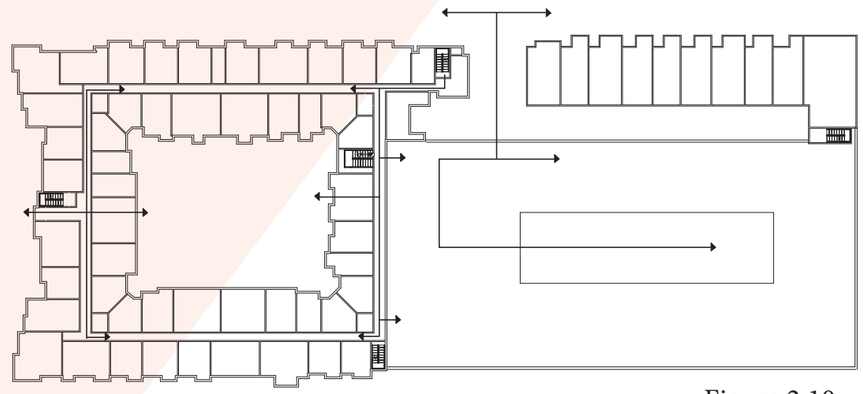


Figure 2.10

Circulation

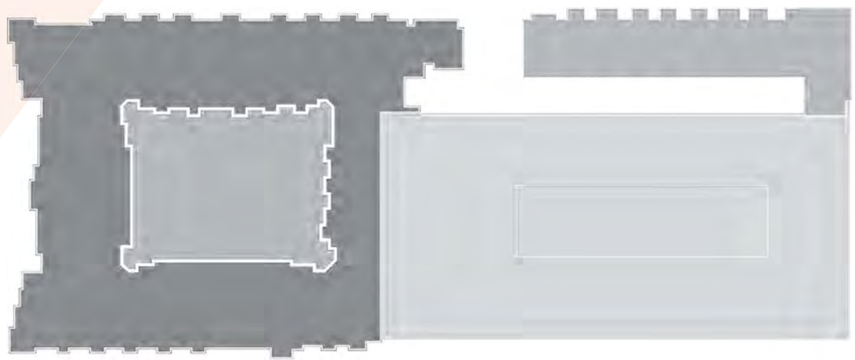


Figure 2.11

Hierarchy

Figure 2.12

As seen in figures 2.12 and 2.13, this is the connector bridge that connects the parking structure to the rail station (the parking structure and apartments are physically connected as well). One exactly like this one, minus the arm stretching to the parking garage exists on the site for this thesis, and it is one of the most important parts of the project, as this is what the tenants are paying for. The one at The COR fails to remain completely indoors from the residences, which is one major feature most people in Minnesota would prefer in the winter. However, one thing the extension to the garage does is it maintains the character of the existing platform crossing and ties it into the building, something that this thesis should strive to do as well.

Figure 2.13

Dallas Area Rapid Transit (D.A.R.T.) Dallas, Texas

Project Type: Development Around Transit System
Size: 62 Rail Stations

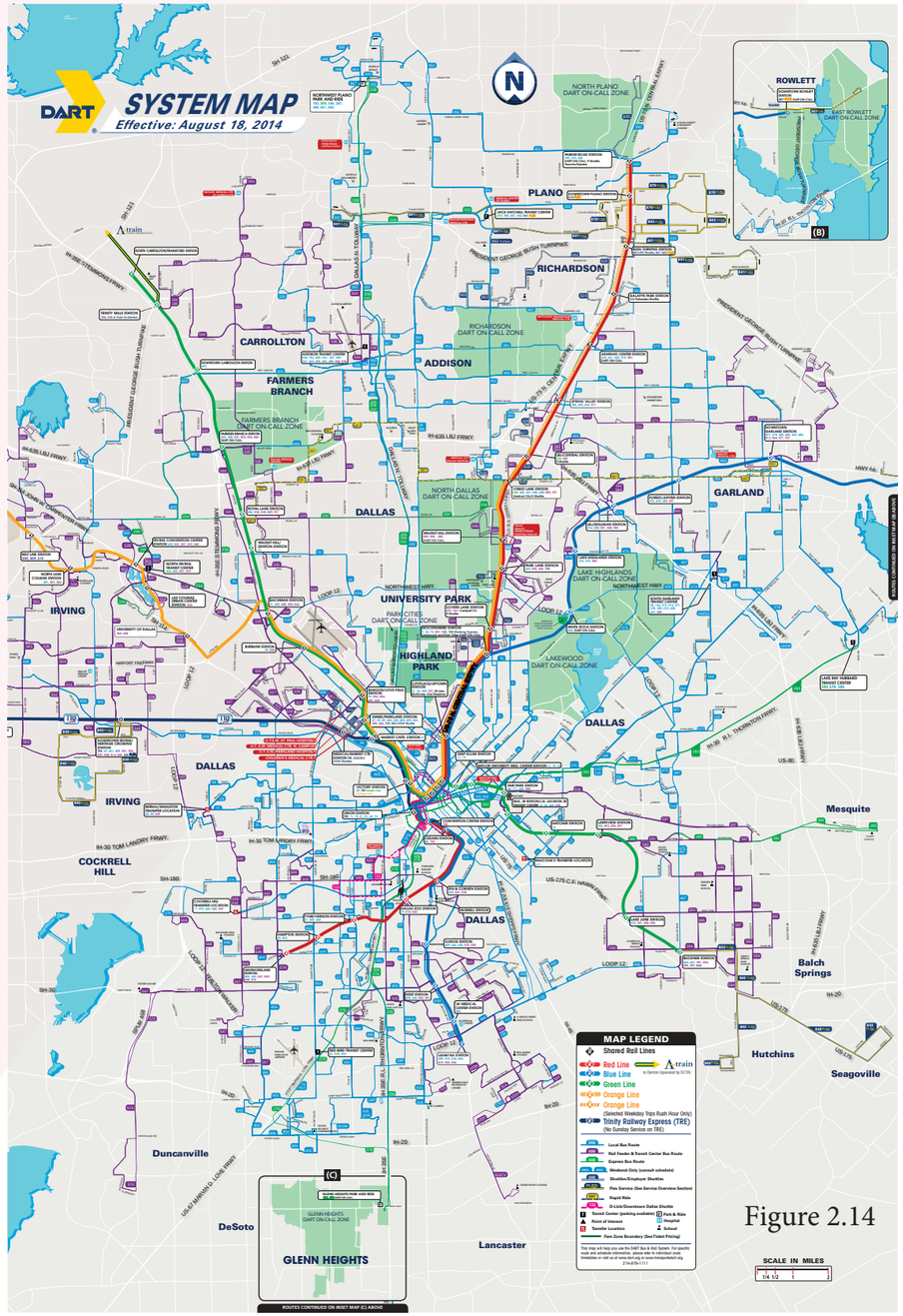


Figure 2.14

Figure 2.15

Figure 2.16

The Dallas Area Rapid Transit, commonly known as D.A.R.T., system of public transportation (as briefly discussed in the narrative) has been a huge success in the world of transportation. Dallas was one of the earliest to hop on the idea of this type of large scale public transportation, because of the large, sprawling cities forming around its growing center of business and tourism in the city's center. This concentration of workers and visitors traveling to the city from the suburbs, something that is becoming a trend in many cities now, put a high value on the city's ability to bring them quickly to and from their places of employment.

Something happened, however, that not many city officials thought would happen right away. That is that many people and developers would begin moving and building around the areas where these large suburban transportation centers were being built. These developments became the center of new growth around the city. This has lead to large amounts of anti-sprawl occurring in cities with these types of quick and reliable transportation systems, and is why stations like the one in this thesis are possible. People that live on the outskirts of town or in the suburbs surrounding large cities have decided that they'd rather have the larger floor plans of housing that they offer, instead of the more cramped and expensive lifestyle of living downtown. A study shows that "through early 2000, more than $800 million in private funds has been invested in development along DART's $860-million, 20-mile Light Rail Starter System." (Light Rail Progress) This shows the amount of demand that these types of development have on a community and the real estate in an area. Also, "Dr. Bernard Weinstein of the University of North Texas's Center for Economic Development and Research determined that 'Values of properties adjoining DART light rail stations are 25 percent higher than for similar properties not served by the rail system'..." (Light Rail Progress) This again shows the enormous positive impacts of these rail stations.

One of the added benefits of this D.A.R.T. system, beyond the residential development has been the commercial boom that the companies on and around the stations have had since its inception. Specifically, the noon crowds that take these trains to grab a bite during their lunch break have increased sales dramatically for the food industry in the area, who "reported a boost in their lunchtime business - some by as much as 40%" (Light Rail Progress). This type of transportation revolution is not only affecting small businesses, even "Blockbuster Entertainment, one of the area's largest relocations, cites DART as major factor in establishing its headquarters in the central business district" (Light Rail Progress) in downtown Dallas. As is evidenced, these types of stations and suburban-connecting rail lines help create booms in the cash-flow for many facets of the downtown economy.

These rail and bus stations don't just bring developers, however, once the land around them is developed, whole communities flock to the area. This type of residential arrangement creates strong ties in the community that bring many different people of differing lifestyles, but still with many things in common revolving around their shared use of the public transportation system, to live together. Not many places have this type of connection between its residents, where a majority work or at least frequently visit a downtown area, and get there using the same mode of transportation. Leaving for work at the same time every day alongside others waiting for the same train is a great place to meet your neighbors and bond over a mutual use of the public transportation system. Not only do the communities have this common trait of taking the same train every day, but they would also share the same living residence in this thesis project as well, creating an even deeper connection to all that one could meet at the station. One thing that the Dallas area has as an advantage over its Minneapolis/St. Paul counterpart, is that Texas has always been an open and accepting place for public transportation. Residents in the Twin Cities suburbs, however, are more hesitant to hop on board with the idea. This thesis, as stated earlier, looks to bring the same community spirit and accepting environment of public transit by making the system seem much more clean, modern, and inviting to newcomers.

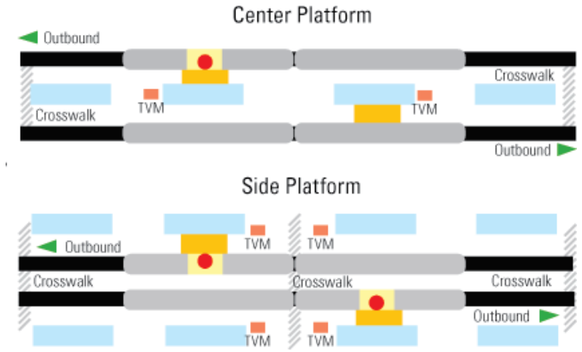
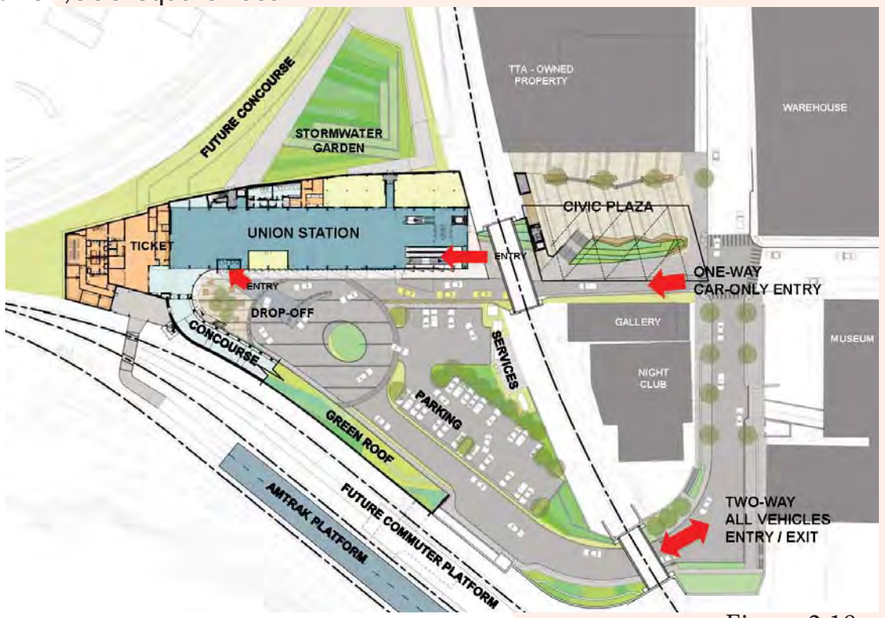


Figure 2.17

Union Station: Raleigh's Multi-Modal Transit Center
Raleigh, North Carolina

Project Type: Transit Center
Size: 82,000 square feet



Site Circulation and Massing Figure 2.18

The city of Raleigh, North Carolina is developing plans for the construction of a new transit center that will play host to a lot of the needs that the city has been building up over the years. After winning a substantial federal grant from the USDOT, Raleigh has finalized plans for a new station set for construction in 2015. The city had found some space that they thought would be great to connect the current rail lines and their "Amtrak" line. They then decided to use some historical buildings, along with some great new modern designs, to give the area a revitalized feel with a whole new purpose to bring back a struggling sector.

A few key things were explored and answered with this site that mirror some key concerns that have to do with the thesis topic and site of this proposal. Firstly is the introduction of the bus system going in and out of the site for those using either multiple forms of transportation, or just the bus system, and making it convenient for both. Also, circular driving patterns to load/unload cars in front of the station and around a core area of parking was crucial as well for those that must take their own vehicle as well to and from the station. This allows for both modes of transportation to coexist on most of the same driving path, while still giving clear access to the bus routes, which are a primary way of getting to an individual's train.

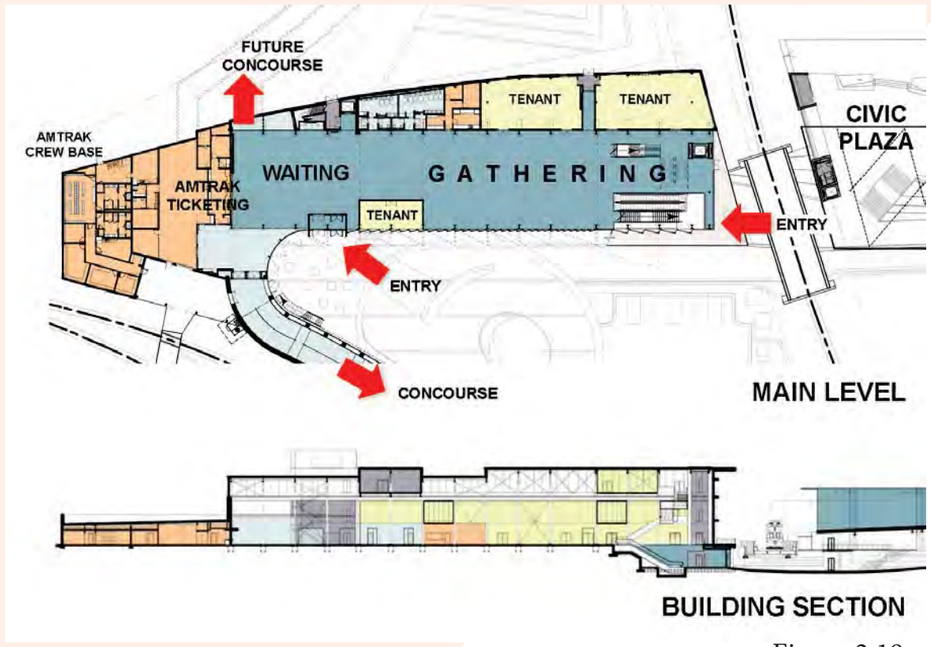


Figure 2.19

Plan to Section and Circulation

Figure 2.20

Figure 2.21

Figure 2.22

Figure 2.23

The design of the transit center itself has a great modern feel to it, and looks to give way to functionality and leaving it open to possible future uses and possible larger number of users. The large, open ceilings and clean lines that define these modern public transportation centers are helping change public opinion that these buildings are dark areas that get to be cluttered and dirty. This is a misconception that this thesis is also looking to correct, using these same clean lines for the transit center, and keeping the spaces open and visible to the public to maintain some transparency. A feature that could also be a big factor in this thesis coming from this transit center design is the two-story design that allows for the trains to lower down to the level of the lower level, while also allowing the vehicular and foot traffic coming to the station to come in at the main level.

Not only does this station have some great interior plaza-type public spaces, but it also has a large outdoor plaza that has some great exterior, modern, sun shading devices. These very simple, but elegant devices create not only an interesting space for an outdoor environment, but also make it livable by reducing wind in colder months and sun glare in the warmer months. Since this thesis site will have such a large base site, there will be an increased precedence for making these outdoor spaces wide-ranging to support multiple uses, but also comfortable for those that would use the spaces every day.

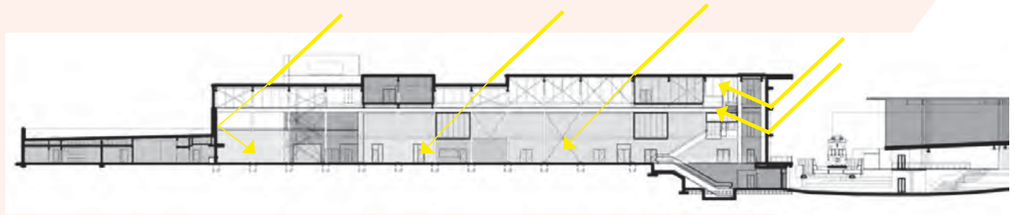


Figure 2.24

Natural Light

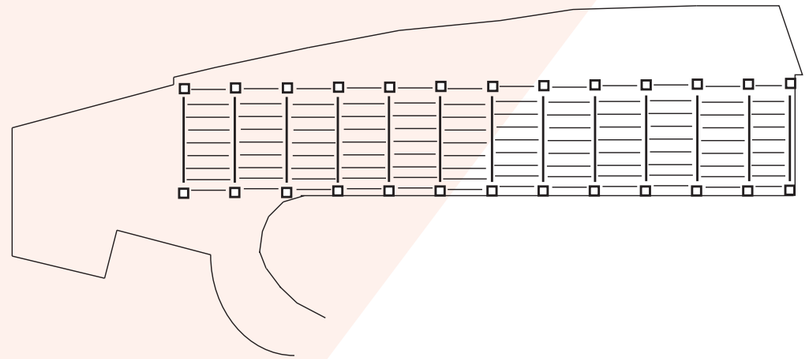


Figure 2.25

Structure

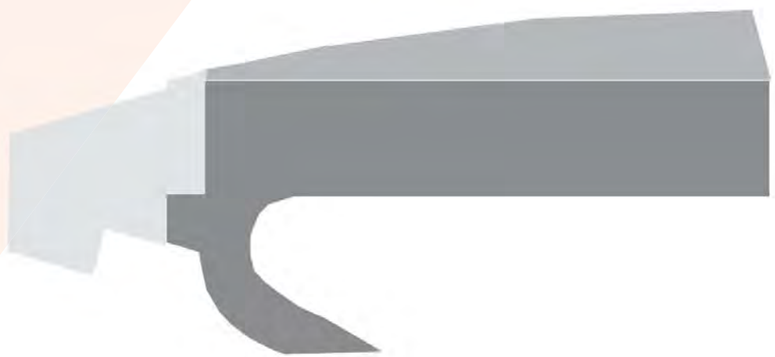


Figure 2.26

Hierarchy

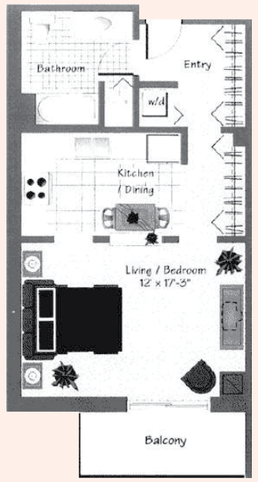
Apartments Along the Hiawatha Light Rail
Minneapolis, Minnesota

Figure 2.27

Figure 2.28

Figure 2.29

Figure 2.30



Project Type: Downtown Apartment Units

To get a good idea at what the difference is between living downtown and living in multi-family living facilities in the suburbs, one must first research and analyze the different arrangements and accommodations that are offered in the downtown area. In an analysis of the differences between these two different living styles, these examples from around the Hiawatha Light Rail will be compared to The COR living facility right off the Ramsey Station for the Northstar Commuter Rail as mentioned in a previous case study. First to be analyzed is the studio apartment arrangements offered by all parties. The studio apartment is, a lot of the time, what the young professional is able, but even nowadays, willing to purchase with their paychecks. They sometimes opt-out of owning a larger property of their own, by instead having smaller real estate on hand of their own in order to help fund their larger outgoing lifestyle of bars, theaters, or other entertainment venues. These studio apartments downtown range from $850-$1,000, and the ones at The COR in the suburbs are around $915, however, these also come with approximately 100 more square feet per unit compared to downtown. But the biggest difference between these small dwellings is not in price or in square feet, but in amenities. This is what makes a good apartment complex great in these small “planned communities” of apartment buildings with units this size, is the amount, variety, and style of its amenities. This is where these students, young professionals, or other single people meet new friends in these communities and have a chance to socialize away from all the work of going out.

Figure 2.31

Figure 2.32

One bedroom apartments are the most-sold unit sizes for apartment complexes, especially for the targeted age group of younger professionals. These unit sizes offer the comforts of single family home living with separated rooms and defined living environments. This is something crucial for those moving up to one bedroom apartments from a studio-sized one, room definition. Defined living areas is something about a one bedroom that really helps those that are coming from college after graduation and lived in dorms throughout their time there or had roommates the whole time that they shared a place with. This is their chance to go out on their own, or with a significant other, and feel like they are renting a small home instead of an apartment unit. So, while the studio unit environment was meant to be more of an edgy and fun place to be, one bedroom units are the more comforting and inviting units that can bring a sense of accomplishment to those that have moved up in the world. This does, however, not eliminate the need of amenities in these buildings, but only changes the types of amenities needed. Now, things like bike storage, group (yoga or pilates) workout sessions, doggy day-care, and regular child day-care start to become incredibly important to the residents of these larger units.

Figure 2.33

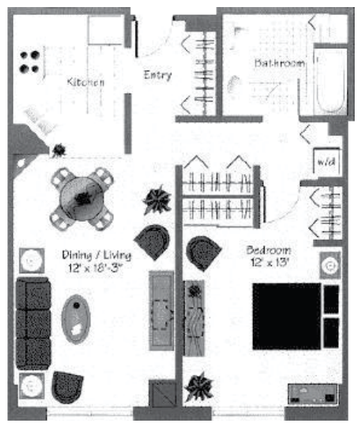


Figure 2.34

Figure 2.35

Figure 2.36

Figure 2.37

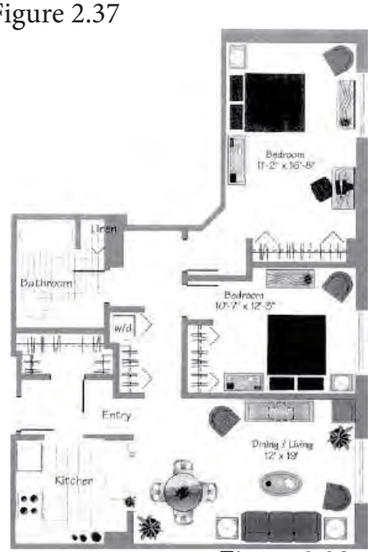


Figure 2.38

Two bedroom units are the catch-all for apartment units. These units can house anyone from a family with kids that work and go to school downtown, to two-four older students or young professionals that are splitting the rent with roommates to get by for a couple of years. Either way, these spaces need to be versatile for all uses in a household, from raising a family, to hosting social gatherings on a regular basis, these units have to do it all. This is why these apartments sometimes have multiple floor treatments across open concept plans, to keep the separation of spaces that one bedroom concepts have, but still have it remain open enough for these larger living arrangements. Two bedroom designs need to be much more open to be successful than a one bedroom or studio ever would need to be. In order for the residents of units this size to play host to the social gatherings that units of this size usually have, space is what is seen as the conduit with which they create that atmosphere. Large spaces, open concepts, and even just taller ceilings go a long way to making these users' experiences much more desirable and makes living in an apartment feel like living in a full size house.

Typological Research Summary

The COR development, D.A.R.T. system, Raleigh multi-modal transit center, and the example apartment buildings along the Hiawatha light rail lines were all great examples of the things that come from a project such as this thesis. The theoretical premise has adapted to the incoming information from these case studies, moving from a simple investigation of how to create a better and more publicly accepted public transportation system and evolved into much more. This project, especially after the case studies of The COR and the D.A.R.T. systems effects on their surroundings brought this more towards continuing a revolution in design and making it an overall wonderful experience for those tenants and riders involved.

The COR development, while being slightly too ambitious for its time (as well as coming at an unlucky time around the economic downturn), had a lot of great ideas on bringing some concepts of what it means to bring improved downtown living to the suburbs. The development's attitude towards amenities and placing such a high importance on them really sets the complex apart from any living situation downtown Minneapolis might have to offer, not to mention the extra square footage that it has to offer as well. Also, the apartment layouts that were analyzed gave an insight into what is desired in that downtown living and what might attract those living in these smaller apartments out to the suburbs. The Raleigh transit center also provided invaluable perspective as to the extents a designer needs to go to bring all that is required for such a facility, and what the possibilities are when created to bring a truly positive experience to all riders.

Figure 2.39

Figure 2.40

The Raleigh transit center did, however, have a unique idea for its station. This unique trait was an additional floor above the main terminal that would function as a meeting place, as well as an additional place to wait for a connection bus route or an indoor spot to wait for your train. This was something not yet considered and really adds an even more in-depth community feel that became a focus halfway through this research process. Both sites of the transit stations, The COR and the Raleigh transit station, took on the best attributes of the sites that they were presented. The Raleigh station was born into an old warehouse district, and took on many of that districts historic characteristics, while still maintaining a modern vibe to the station. However, The Residences at the COR was built on a completely blank slate field in a smaller suburban town, and was therefore built with a much more open feel to the plans involved and a very suburban looking aesthetic being applied to the residences.

As with the sites, the different social contexts of the areas made the different developers utilize much different types of parking. For example, as The COR was based around a suburb that expected almost all travelers (expect those living on site) to travel by car, hence the large parking structure. However, the Raleigh transit center is more about picking up/dropping off individuals, and grabbing a connecting bus route to make it to your destination. The residential units from the apartments along the Hiawatha line show the spatial relations that those looking for a downtown vibe hope to find, and the D.A.R.T. system shows how all of these types of construction can be implemented with huge success in a large metropolitan area, and truly shows the functional relationships between the varied building types being described.

Major Project Elements

Multi-Family Living Elements

- Large entrance
- 4 stories of apartments/condominiums
    - Mostly 1 and 2 Bedroom units with some studio or 3 Bedroom units
    - 2 story units as penthouse suites on top of building with a double-height element included in layout
- Community pool and hot tub area
- Community fitness room
- Offices for employees of building developer/property manager
- Accessible vertical circulation throughout
- Laundry in units
- Balconies and other outdoor space
- Child and pet daycare services
- Club rooms for more interior communal space
- Inner courtyard space to build a sense of community among tenants

Transit Center Elements

- Small to medium-sized bus station/terminal
    - Access to downtown and neighboring cities
- Large train station
    - Boarding platform
    - Safe access to station
- Open concept and clean lines to create modern and clean feel
- Large space to sit indoors and wait for the next train to arrive

Shared/Outdoor Elements

- Large parking structure
    - Separate public parking from tenant parking
- Large outdoor plaza
    - Includes water feature, area for pets to roam, small trails for walking
- Small commercial developments accessible to both tenants and public users
    - Coffee Shop
    - Deli
- Future larger commercial development close-by to provide for tenants and surrounding neighborhoods
- Bike racks
- Dual purpose parks in both urban and suburban halves of the site

User/Client Descriptions

Residents- These are the users that are at the heart of this thesis. These inhabitants will live and be connected to the mass transit system that will bring them the downtown lifestyle with the affordability of the suburbs. These residents will be expecting all of the modern living effects of downtown living, with the extra living square footage and amenities that downtown could never offer.

Transit Users- The main focus of this thesis is to create a successful integration of a mass transit center into the lives of the people that most want/need to take advantage of it. However, these users will be comprised of both the general population that commute to the site, as well as those that will be living in the facilities on-site and a short walk's distance to the terminals. Therefore, it is imperative that these park-and-ride commuters are taken care of as well with both their parking and travel considerations.

Visitors- Residents of the living facilities adjacent to the transit center will most likely have guests over at some point to socialize with either their downtown or suburban friends and family. There will also be some residents of the nearby neighborhoods that will utilize the outdoor and public spaces provided by the complex. The spaces, even now as an open field, are used by dog owners and some outdoor enthusiasts, but a surge of visitors to the area can be expected once it is improved upon for the new residents.

Employees/Facility Management- There are also the workers that will have to manage both the living facilities and the public workers that are required to man the transit station that need to be taken into account. Without them, none of this would be possible.

Peak Usage-

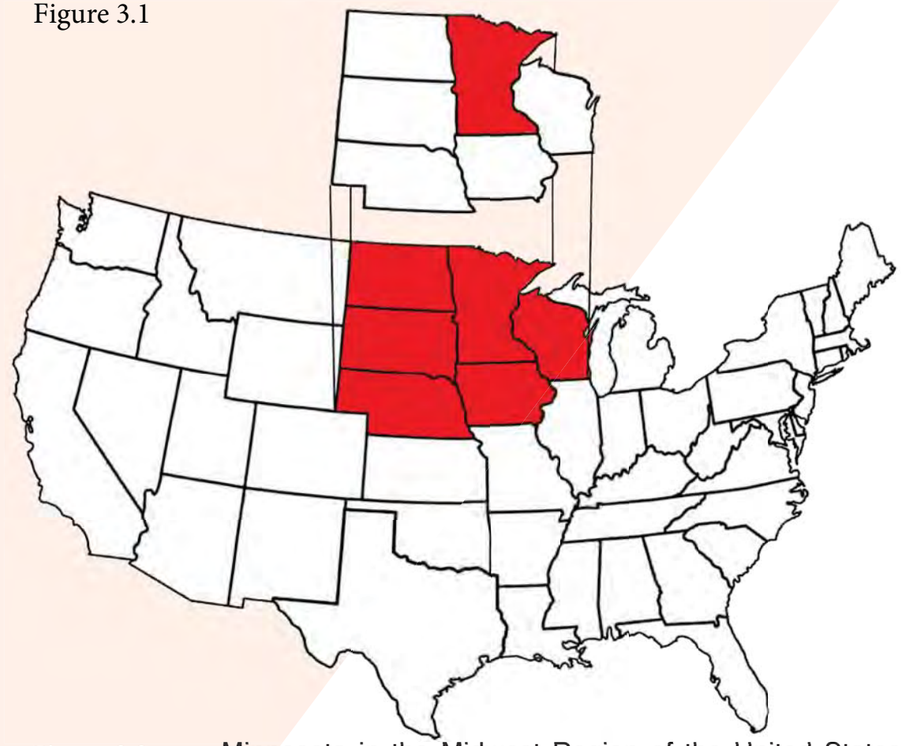
Apartments:	5:00 p.m. - 7:00 a.m.
Transit Station:	4:30 a.m. - 8:30 a.m.
	4:30 p.m. - 7:00 p.m.
Shops:	5:00 p.m. - 10:00 p.m.

Parking- Requirements for parking will be dependent on the number of units of apartments provided, which will be added to the current number of parking spots that are provided for the station as of now. A large parking structure will most likely be required to accommodate all of the vehicles.

The Site

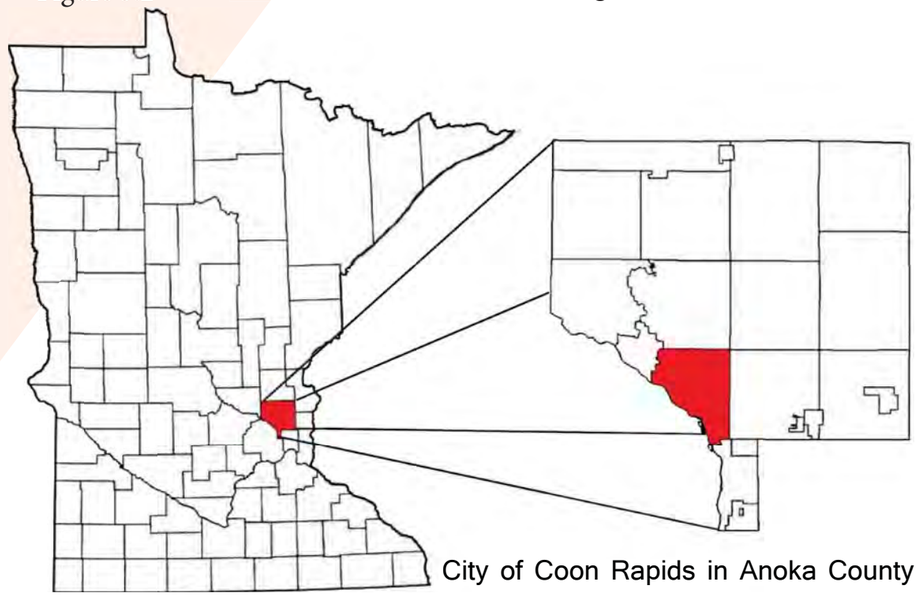
Northstar Commuter Rail Station - Riverdale Station
Coon Rapids, Minnesota

Figure 3.1



Minnesota in the Midwest Region of the United States

Figure 3.2



City of Coon Rapids in Anoka County

Owner: Anoka County Regional Railroad Authority
Site Area: 15.18 acres just south of Riverdale shopping center
Zoning: "Riverdale Station Transit District" -
Townhouses, Apartments, Retail, Restaurants, Commercial, etc.
Tax Classification: 5-E Exempt Properties

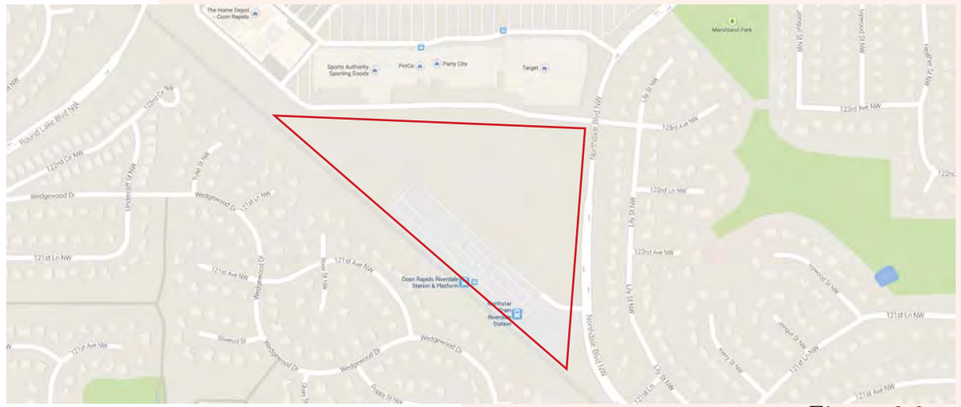


Figure 3.3
Streets Map

Figure 3.4
Satellite View Site Map

The site off of Northdale Boulevard is blocked to the North by the Riverdale shopping center, to the East by the road and a large residential neighborhood, and to the southwest by the train tracks and a large row of evergreen trees to shield the residential neighborhood behind it. The main view is that large greenscape of trees along the border, as well as the established neighborhood to the East. The commuter train and bus access that is directly accessible on-site is a part of the main form of public transport in the area.

This site was chosen because of its many traits that will allow for growth of this type of community, as well as its location on an already established train station. Finding a site that had an already established station was a high priority, because of the amount of planning, extra cost, and risk that would go along with creating a new station in a new area, while also trying to keep bus routes in mind. However, while that was an initial limiting factor to potential sites, this site specifically met all of the major site criteria to make for a viable site for this thesis topic. The northern suburbs were chosen around the Twin Cities because of their recent rapid growth and popularity, and because of the large number of its citizens that travel every day for both work and pleasure, growing by "12 percent...from 700,276 to an estimated 784,000" from 2012 to 2013 (Doyle).

Another key component to this site's viability was its proximity to many big box retailers within walking distance through the Riverdale Village shopping area, as well as the established single-family residential neighborhoods around most of the site. This brings together ideal conditions of proximity to shopping for the tenants, and a stronger connection to the larger network of the residential communities that will allow the smaller community of the on-site dwellers to thrive. This gives these tenants the best of both worlds of living in the suburbs, while still having this site continue to be a connection between the large commercial center and the neighborhoods. This connection means there will be more traffic through the site, and therefore more and more potential users of the railway walking past it every day.

Figure 3.5

This site has the potential to not just bring another option for commuters with more mass transit, but it can also be a beacon for those in the area as to what the real possibilities are with public transportation. With the large amount of foot traffic and vehicular traffic in the area, this site is in a prime location that if it succeeds, it could persuade more and more of these commuters to give mass transit a chance. This gives another reason for such a bold piece of architecture needing to be built on the site, as this is what will be an example of the high-class type of public transportation that is available in today's cities.

A great way that this site can positively effect the local community is by bringing this group of riders that will be visiting the site every work day at the very least, and with some strategic commercial development will bring in even more cash inflow. Also along with this inflow of income for local businesses, would be the sense of community that a group that takes the train every day together builds. Even just the action of taking the train together, shopping around the same area, and living in the same area (or even the same building) builds such strong relationships and helps communities really connect to each other. This sense of community is what suburban areas really need. What they lack is a sense of identity, which is what a building such as this would foster between its tenants.

Figure 3.6

The Project Emphasis

This thesis project will focus on creating a sense of community within the small community that inhabits the site, while also keeping a connection to the city that the site is within. However, it is crucial that the transit center has a downtown connection as well.

Material selection and construction detail development will aid the user in feeling comfortable with using public transportation for those that are either intimidated or ignorant of the advantages of public transportation. Landscape assessment and development is also an important emphasis of the project, because this is one thing that the suburbs will always have as an advantage to big city living, and that is readily available large open green spaces.

Ranking of Project Emphases:

1. Creating a sense of community for residents
2. Large transit center that appeals to potential new riders
3. Modern, downtown feel through material development
4. Detailed site development focusing on strengths of both areas

Self-Oriented Goals of the Thesis Project

Academic Goals

One of the major academic goals that I wish to accomplish with this thesis is to develop myself as a designer, while still keeping up with the trend of high performance renders. I will be pushing myself to not only design a building that will hold the required spaces for the owner and its tenants, but to construct a piece of architecture that truly has a wow factor. One way to acquire this wow factor is by utilizing the most of the technological hardware and software provided to me. I will be fully utilizing render programs and advancing my degree of mastery with architectural programs such as Revit to best convey my ideas of a huge and impressive transportation center.

Professional Goals

There are many facets of the professional world that I will still need to improve upon, even after a summer internship experience, but I believe the best way to improve is to design the most comprehensive building I can. This is what is required in the profession, and this is what should be expected of me when I am designing a capstone to my education before entering into that profession. I will take the knowledge I have learned from my time in a practicing firm and apply it to this project, while still focusing on learning more and more about the field of architecture and how I can best learn from it to improve the quality of this thesis project.

Personal Goals

The biggest goal for this thesis project (besides obtaining my Masters degree in Architecture) is to create a thesis project that I can be proud of, and that showcases the best of my abilities so far as an architecture student. While getting high marks on the project is of huge concern for my academic standing in the school, a project that I can show off to employers, as well as friends, is more important for me personally. Also, another goal of this thesis would be for me to work on all of the areas that I feel as a student that I could use some improvement, such as time management and improving my final products from good to great work.

Project Goals of the Thesis Project

Theoretical Goals

The idea behind this thesis is exploring transportation centers and how they are affected by the wants and needs of the public. It is therefore key to tie this building to the downtown lifestyle in the minds of those that would use it, in order to gain a connection to the larger world of mass transit and the life that a large city has to offer.

Physical Goals

Physically, this project hopes to create an easily accessible and highly desirable way to access public transportation. Its goals, therefore, would be to look as open and transparent as possible to the common passerby, and to make a transportation center that is engaging. Also, it is important that it has an aesthetic and an attitude that makes going to work in the morning or meeting friends downtown late at night an enjoyable experience.

Social Goals

One of the more important parts of this project aims to create an appreciation for public transportation centers and the system as a whole by making users feel safe, comfortable, and relaxed. Another important social goal for this project, is to create a sense of community within the on-site living quarters and its tenants. These tenants are those who benefit most from a building project such as this, they gain the ease of access to all cities around them, while still maintaining a lifestyle that is not overly costly to live.

A Plan for Proceeding

i. Definitions of Research Direction

A further study or even a poll should be conducted in order to ascertain what the public truly wants (furthering the research about the theoretical premise) from a transportation center and connected apartment complex such as this. This will have to do with things from amenities to how much small scale commercial development is wanted/required on-site. With regards to project typology, this could change slightly based on the previous research/ poll, but I could see a possible investigation into small scale master planning for the entire site if the public wants it completely infilled. An investigation into the parking requirements of a project of this scale and typology will also need to be conducted to acquire an accurate count, as this is something crucial for the transit center and the attached apartment complex.

The location of this thesis proposal does not have any great history surrounding it, but it would be greatly beneficial to look into the history of the area and what the residents in the area have traditionally preferred. Also, an investigation into the history of the transit system in general would also provide great depth to this project. The site currently is a blank slate, as it is a large, open field. However, an analysis of what has been proposed for this land in the past would help give further insight into this site, as well as a study into how this station and residential units could effect the nearby single-family homeowners.

ii. A Plan for your Design Methodology

The design methodologies will be a mix of quantitative and qualitative analysis. Initially, public involvement through a poll, questionnaire, or interview will be utilized to gauge public opinion on what exactly might be required of a facility such as this. Also an important question that will need to be answered is how they see a transportation center might become more accessible and desirable to them to use in the future. This will produce statistical data that can be analyzed and interpreted alongside the qualitative data that this public involvement will bring. A digital and graphic methodology will also be implemented, as this is what will truly help decipher what sets these successful transit centers, apartment complexes, and site designs apart from the mundane. After all of this data has been analyzed and reported, a design that truly works for the public and works efficiently overall will be achieved.

iii. A Plan for Documenting the Design Process

The process of documenting this thesis will begin with the creation of hand crafted models and drawings/diagrams, which will be complied through photo or scanning documentation. Digital models and renderings will also be created for the design and analysis of the thesis. These models will include, but are not limited to, BIM software such as Revit, computer aided drafting programs like AutoCAD, and some work involving quick 3D modeling with SketchUp. Throughout the design, projects and model iterations will be saved and collected at either a week-to-week basis or at the completion of a category of work, whichever comes first, and then backed up on an external hard drive to prevent loss. At the end of the project, all of these workable documents will be brought up to presentation quality and presented through either a board layout, or as a part of the slideshow at the thesis presentation. After the presentation, all files will be uploaded to the institutional repository, where all of those with permission will be able to access it and learn from the work.

iv. A Specific Schedule for the Project (using Microsoft Project)

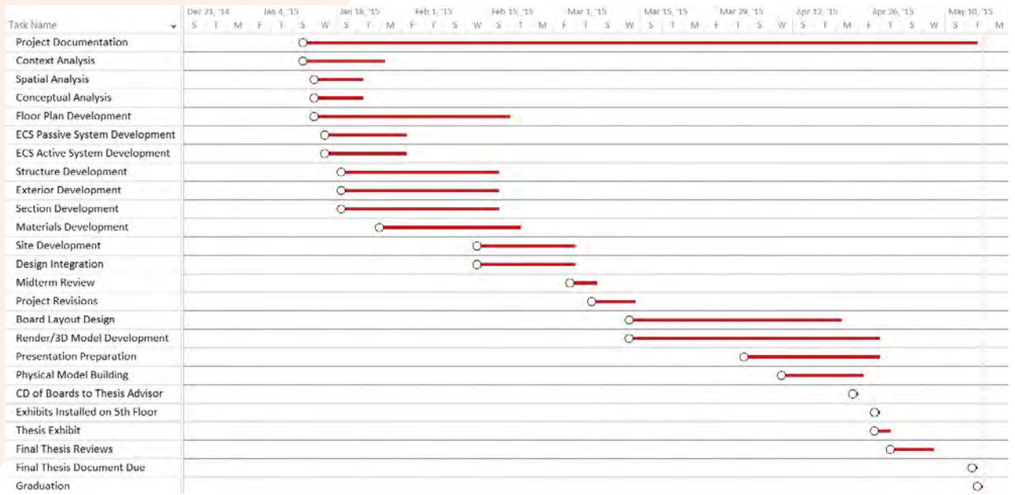


Figure 3.7

Thesis Program

Results from Theoretical Premise Research

The Positives of Mass Transit

Mass transit has become the lifeblood of downtown accessibility in recent years. For mainly economical reasons, as well as some social aspects of the need to take care of the environment, people in suburban areas have been moving towards large-scale public transportation. Each case is different in the final reasoning one decides to switch from single automobile travel to public transportation, but the amount of reasons presented to travelers over time is quite persuasive. Even in just economic terms, anything from the amount of money saved each time users would have to fill up their gas tank compared to a one month transit pass, to the amount of extra work that these workers traveling on public transportation are able to accomplish by not having to wait through rush-hour traffic twice a day. Also a benefit of this mode of travel is that now that rush-hour traffic is no longer a concern, working during peak business hours is no longer a problem, whereas some employees are forced to orient their work schedules around the hectic traffic hours to avoid spending too much time getting to and from work. This is especially the case for the people that this thesis project would be affecting, as these workers that would be traveling to the Twin Cities (Minneapolis and St. Paul, MN) have some of the longest commutes in the area since the site is located within the outer suburbs of these cities.

Figure 4.1

When strictly speaking about economical affordability and getting the most out of every dollar spent in real estate, the suburbs win hands down. This is actually one of the main reason that people have moved away from downtown city centers and into these areas. One of the biggest arguments against this trend towards suburban living has been that travel to and from the city is less than ideal, especially if one works conventional hours like everybody else (which most users do), which makes the argument even more persuasive. However, with mass transit gaining more popularity in recent years, this is beginning to have less and less of an effect on people's decision on whether or not to move into or away from the big city. This project looks to further erode that line of thought from the decision-making process by making these forms of public transportation downtown as, or even more, accessible and encouraging of an option than driving to work in traffic every day, which has become so ingrained in our society today.

Social Advancements

As society has steadily progressed upwards in its thinking about how it conducts itself, one large contributor to the rise in mass transit has been the adoption of green thinking in today's average citizen. Green technology and green thinking have become a mainstream way of thinking in the United States. People are finally putting away their car keys in the morning to take a bus to work, or to go further by stopping at a train station. The green aspects of modern public transportation have been noticed by the public and it is not going unnoticed. Being able to shuttle around people visiting or working within the city at this scale, and removing the same number of cars from the roads has led to much less congested traffic for those that do still drive, and also removed a huge portion of our carbon footprint that everyone's daily commute contributes to.

Another aspect of modern public transportation that has helped excite the populace is the actual improvement in their ride to and from the city, whether for work or social gatherings. Not only does this allow users to let their focus stray from their destination to more fruitful endeavors like reading or other productive work, but it also allows them to converse and network with other individuals riding these modes of transportation. This has been one of the great things to come from this transit revolution.

When people started driving to work on their own, a large disconnect became a reality for many commuters. People ceased to meet new people, talk with other individuals, or interact with others at all besides at home and at work. This is something that, from a long time ago, has been lost due to the simplicity of the automobile and the deteriorated image of public transportation, and something that this project hopes to inject back into society by not only having these transit users ride together, but also potentially live together and connect even deeper.

The social aspect of commuting with others and living alongside other human beings is something that will help bridge this gap of singularity that many individuals experience in today's society. Mass transportation will be a common influence in all of the lives of those that will live on-site, and will therefore help these individuals connect with each other, while also having a large amount of community amenities that would help start to change the social landscape of society today. By having these individuals create this community of mass transit commuters, transit stations become a lot less intimidating for all involved, even those not living on-site and next to the station. The introduction of local, small-scale commercial shops will also bring about another avenue that would help bring those in outside communities in order to help blend the city of Coon Rapids with those of this smaller community, and with the Twin Cities as well.

Figure 4.2

Figure 4.3

Advancing the Image of Public Transportation

An important goal for this project is to bring a way to bring about the advancement of public transportation as a leader in the discussion of the most effective daily commute system. A problem that some users come across with these types of transit systems, is that they are not fully aware of how to become informed about the system enough to begin using it on a daily basis. A major factor in this fear of information is how most people nowadays are so set in their ways of driving to work on their own, that they don't even investigate other possibilities when they are presented. This project looks to undermine that deeply rooted fear of change from the familiar by showing the public how safe, convenient, and positive the public transportation system is nowadays.

Something as complex as getting someone to notice a new transit terminal and to get them to investigate further into the services it provides requires something that architects are uniquely capable of providing to the situation: intrigue. In order to pique someone's curiosity about the possibilities of mass transit, they have to feel impressed with what it has to offer. But, more importantly, these potential users have to feel comfortable in the spaces provided to them. A large misconception that has arisen about these transit stations is that they are cheaply built, dark, and dirty

places as time has not been kind to the spaces. The project will shatter this ideas of a forgotten and passed over space the moment it is seen, as it will be a space that is grand and caters to the needs of those that would be using it, the public - the average user. This goal is crucial to the project in the fact that suburban areas such as these are the areas that need the most convincing to use these types of systems, whereas those in cities are already used to using public transportation in their daily lives.

On-Site Communities

Ease of access to mass transit

The biggest advantage of these types of on-site communities living right next to a transit station is the incredibly easy access that is provided to them to travel to almost all major cities around the area. Most importantly, tenants of this type of community would have a moment's walk to a station that would bring them along the lifeline of downtown travel, and bring about immediate access to everything that downtown living has to offer. This immediate access to places of work all over the Twin Cities, as well as bars, sports venues, and other popular entertainment options downtown means that tenants would not be sacrificing much to live in the suburbs, where prices per square foot are much cheaper and spaces are much larger.

Figure 4.4

Green living at its finest

A huge positive of this lifestyle is the amount of energy is conserved from either driving to ones work and back or even just driving to the transit station and back home. The reduction of the carbon footprint of all of those involved would be enormous if even half of the tenants in the building commuted daily to and from the Twin Cities just once before moving to this location. As stated before, congestion would be slightly reduced with the few commuters removed from rush-hour traffic, but this could have an even greater effect if station communities began to take off and become part of other transit stations as well.

Great Neighbors

As was discussed earlier, a project of this variety would need to improve the popularity of these stations, but on-site communities such as these would also bring about notoriety of the kind of lifestyle that comes with living directly next to said stations. Common public thinking about transit stations has been that they are not ideal neighbors, as people believe that the commotion of a station would be too much to live next to for the average tenant. However, this is one of the great things about stations such as these. This activity (which is not overpowering all the time, with peak activity around 8 A.M. and 6 P.M.) is what gives the place some life, especially for the commercial interests involved, but also for the people that live in the adjacent buildings. This is what downtown lifestyle is like, and is what most of those living in these units would be looking for. Inside of the units and the living complex there will be enough places to relax, that the outdoors need to have some life and activity to keep the community from going stagnant and being forgotten. The traffic that would be coming through the area would not be disturbing to those that do not seek it, as the units would be far enough to avoid noise and human activity distractions, but would be accessible to those that would like to even seek it further out in a downtown setting. These transit centers are not just areas to avoid living near, but rather, are members of the community that bring with them access to downtown and all that urban centers have to offer.

Small business development

Along with improvements to the lives of those living nearby in the multi-family complex, there would be an influx of new customers and more frequent visits from existing ones for the area businesses. While the area's big box retailers would also see some more volume in the traffic in their stores, the businesses that would see the greatest impact from a community such as this one would be ones integrated into the community. These small businesses would be a special part of this group of new tenants. The added functionality that these smaller businesses bring to the community would be an invaluable asset. They bring the stability of accessible goods and services to those on the grounds, while also bringing a face for the transit center along with them, as these businesses would be the bulk of who most visitors would be meeting with on a daily basis within the community. These small businesses would also keep the flow of people within the community going slightly even in off-peak hours of travel, as local people would also want to visit these shops, which helps keep that downtown feel of vibrance and activity going for the tenants living and shopping there.

Figure 4.5

Bountiful parks and green space

If there is one thing that suburban living will always have to hold over urban living, it is the large volume of open space available and the amount of parks and green spaces calling suburbia home. While it is true that almost all downtown centers have some sort of green space or park area, most of the time they feel as if they have overcome the small amount of space that they were given. This is contrary to the thinking outside the city's center, which embraces the large amount of open space that is provided to it. Suburban parks and green spaces are typically much more expansive than their urban counterparts and have a much more "roaming" feel to them where one is able to walk or run for a long period of time without having to converge with too many others using the space. At the same time, suburban parks are still able to maintain that "meeting place" feel that urban parks have captured so well, by having specific points in the spaces that are meant for more public gatherings or meetings between associates/friends.

Giving back to the community

Transit stations such as these not only provide access to great modes of transportation to and from the city for those living in suburban cities, they also can be used in reverse by those living downtown. Whether it's a big box retailer that draws them at first, or meeting their friend/family member that lives adjacent or nearby the station, transit hubs are great ways to bring more friends, more potential neighbors, and for businesses, more customers. While the station is great for the suburban city it is built in, the amount of potential growth both economically and in population for the city is a huge asset. In the particular case of this project, there are also commuters taking the transit system coming and going from further north as well. These riders from Anoka, Big Lake, and soon to be from St. Cloud, are all also potential guests to the area. All of these riders have easy access to the city of Coon Rapids, just as much as they do to their final destination of (for the most part) the Twin Cities. It is a transit hub and residential center such as this project that could convince people to get off at a different stop and explore the city that values its public transportation and those that use it so highly.

Research Summary

This research was designed to systematically document the viability of the different aspects that this project seeks to bring together into one well-functioning community and transit system. First and most importantly was the need to get more well acquainted with all that modern day mass transit has to offer the public. This was a crucial first step to help get in the mind of those that use the system every day, and to know what types of transit stations (such as those reviewed in the case studies above) are preferred by users and what kinds of functionalities are required for optimal use. It was also important to know, deep down, what makes people investigate public transportation as an option for their daily work commute or for their trips downtown for entertainment or other various purposes. This gives an insight into what can be improved upon for the station and the community living on-site as well, such as a clean design that is comfortable to spend time waiting for a train.

The progressing social advancement that our country, and the world as a whole, has been moving through this past decade or two towards a widely accepted and strived for green thinking society has done wonders for both the environment and the mass transit system as a whole. Another reason public transportation has begun to change is the public looking for more from their commuting experience. Major changes in society that were meant to better socialize the populace has had a reverse effect where people now socialize less, and go out and meet new people even less. For this reason, taking the train and/or bus to work or for trips downtown has begun to take hold in people's minds, as it allows them to expand their network of professional or personal relationships, all while not having to worry about the road or congestion on the way home.

The image of public transportation has been an issue in the past, but it is something that has been slowly coming around, and is an issue that this project seeks to rectify. One of the biggest misconceptions with a mass transit terminal that people have is that they are not a well-designed place to get around easily for a newcomer, and that they are not welcome and comfortable places to spend any time at. This project would see those misconceptions removed from people's minds when they first see or step into the modern facility design that will be a main focus of the design. This clean, modern look will enhance the many positive features that public transportation has to offer.

The biggest feature that will be a part of this project, next to the transit terminal, will be the on-site, multi-family, residential community. This is where the research had a large focus, because of how important it is that these two elements (the transit terminal and the housing) mesh and work together to bring out the best in each other. Therefore, it was important to research why it is people would look to live in a community that is directly adjacent to a transit station in a suburban sector. The first reason is obvious, these tenants would be looking for direct access to downtown for either personal or professional needs. This makes connecting these two built elements incredibly important both physically and thematically, especially designing for the harsh Minnesotan winters.

Then the research examined why people would not just live downtown, compared to living in the suburbs and commuting to their final destination. One of the major factors for these tenants is economical, they don't want to pay the ever-increasing rate to live downtown while getting substantially less space and features in the apartment itself. Another reason is the environment that a suburb provides, with its huge amount of parks, open spaces, and even undeveloped land. These spaces are not only more abundant than in downtown centers, but also larger than most, with a much different park setting than there would be in an urban park. Where urban parks are much more meant on relaxing in place or small areas, suburban parks are all about getting out, moving around, and enjoying the large amount of space that it holds, perfect for the increasingly mobile and active lifestyle that social trends and society are moving towards.

Lastly, the research looked into why a suburban city would want to play host to such a community as well. Again, a big reason would be economical. These types of more dense residential construction would bring in more business for the city and its business entities, big and small. However, a station and community like this would do more than draw in more money, it would draw in more people. People taking the train through the city from another station, as well as those that have ever thought of mass transit as a viable alternative to their boring automobile commute, would be very excited to live in a city that values public transportation and those that would use it just as much as they do. This would be a great draw to the city in both population, and popularity.

Project Justification

Important to society

This thesis project sets out to improve the relations and image that many suburban citizens have of large-scale public transportation systems through the implementation of an up and coming community style that revolves around the accessibility that a transit system has to offer. A project such as this has large implications. It looks to set a trend in the acceptance, instead of alienation of transit centers in suburban areas that have seen them as something to put in the background instead of front and center. Once completed, this would begin a trend that would help make these cities functional for more than the family lifestyle seekers that currently dominate the area. It would allow for more diverse construction in suburban cities, and even more functional city centers that would become much more accessible to and from downtown. This could even allow for the more free flow of money from city to city as people are able to go from different business centers easily. The reason that this is not possible now, is that these transit centers are not near the sectors of the city that would make it even more profitable for the city and its businesses, such as the large and small scale commercial sectors or even up to the more dense residential sectors.

Not only would this architecture help cities and businesses in the areas where they would be implemented, they would also improve quality of life for individuals looking for a more mobile and convenient lifestyle. The multi-family residential that would be on-site and immediately adjacent to the transit station creates a special kind of community that very few others can create organically. In very limited ways can other facilities create an instant bond that collective use of a shared transit station is able to create. Tenants would not only enjoy both the positive aspects of suburban livings; larger living quarters for a better value, as well as bigger and more abundant green or open spaces to enjoy, but are also able to enjoy all that downtown city centers have to offer; an active nightlife and enormous business and working opportunities. Being able to enjoy the positives of both lifestyles by only having to walk to the adjacent transit station presents amazing options to those seeking a community supportive of such a way of living. Most of the people that would take advantage of such a community would be like-minded individuals that would push the uses and revolutionary aspects of the community even further.

Important to the author

The importance of this project that I was able to make a connection with was the idea that I was helping better suburban lifestyle, as I had grown up in the town of Andover, MN. I have also always had a respect for all that mass transit brings to our communities and have also wondered why more of these types of adjacent-to-transit communities didn't already exist in the state of Minnesota. The deeper meaning and connection to this project came during the site selection process. The only criteria that was initially used was that it had to have an existing station from a commuter rail network and that it be somewhere around the Twin Cities area in Minnesota. This, however, led me to a site that I was unaware existed only a few hundred feet from where I had been doing my shopping for the past decade. The station, at the moment, does not have much to it besides the actual station and parking, but it was the perfect way for me to contribute to my own hometown area.

Viable capstone demonstration

The scale of this project alone will be quite the undertaking to make it a applicable final project to demonstrate my knowledge and skills. But, more importantly, there is a range of complexities that will need solving in this project. One of the bigger issues will be space adjacencies, as a majority of the tenants of the multi-family residential complex are living there for the ease of access to the transit center, as well as the small-scale commercial that will be on-site as well. My designs will also be put to the test, as this will be a facility that is meant to bring people to it that have not thought about taking public transportation ever or for some time. It has to have a sort of draw to it that brings people out of their shells and help them change with the times of green technology and sustainable thinking that our society is now chasing. Lastly, creating a community feel in a multi-family living complex is something that will be essential to this project, and will be a force to sway many critical decisions in the design process to best create what is best for both the casual users of the transit system, as well as those that would live on-site and immediately adjacent to it. These many facets of the design process are what will make it a challenge to complete, and a greater reward when completed.

Historical, Social and Cultural Context

Historical Context

Moving out of the city

Once people moved to the suburbs over a century ago en masse from the city's center, a need was created for something to bring this large population of suburban dwellers to their jobs, friends hanging out, or other entertainment downtown. This trend of large-scale dispersion into the suburban areas emanating from downtown districts started for both economic and social reasons many years ago, and many of those reasons remain to this day. Historically, abundant, cheap land/space has been the draw pulling many city-dwellers out into the suburbs. To this day, that abundance and the idea of "getting more for ones money" remains the biggest factor in the movement trend. Another reason for this trend was the type of lifestyle that a suburban lifestyle brings to a family, as compared to one found downtown. City centers and places of major urban development have become epicenters of business development and a higher class lifestyle living in high-rise condos. On the contrary, suburban living provides a great place for those looking to start a family, as there is a much family-friendly environment where there are more parks and space for growth.

Over the years, this general movement away from downtown centers brought a decline in the quality of living there. However, in recent years, urban living has become much more attractive because of rising amounts of amenities and a social trend returning towards the increase in value of character and history in a place of residence. This increase in the quality of living in these areas has also been trailed by a large increase in the cost of living. Many people that would prefer the active urban lifestyle are priced out of the market, even with the smallest of places. This has forced some potential residents to move/stay outside of these expensive areas in the cheaper suburban cities and commute to the city for work and the lifestyle that that kind of city provides. This is a major reason for this project, and that is to provide access to all that a downtown center has to offer, while still maintaining the affordability that a smaller, suburban area can offer to its citizens. This way, those living close to mass transit can still feel a very close connection to the lifestyle they're looking for, but also get other positive aspects from living away from the city, such as larger and more abundant green spaces/parks.

History of mass transit

Large-scale public transportation is a concept in human history that is almost recognized from the beginning. From its earliest stages in civilization as ferry rides, to modern day light rail and bullet trains, mass transit has had a rich history and integral involvement in the daily lives of many individuals and cities. Historically, mass transit has been a commodity in high demand and has also had a higher price tag to match. In recent history, however, around the time of the earlier subway systems in the United States in major metropolitan centers, that trend began to change. These services provided to the public became much cheaper to operate because of subpar standards of construction and maintenance, and brought about a lower standing of public transportation in the public's eyes. This has given many people the now-false impression that mass transit hasn't and will never change from the low brow, cheap transportation service that it had been so many years ago.

Nowadays, this service for the public has become an advanced network of buses, railways, and even ferries and trolleys that has evolved over time to best suit their needs. Due to rising concerns about the amount of carbon emissions that we have all been emitting and the general trend towards the acceptance of green technologies, the popularity of these technologies has been increasing. People are finally getting over their initial ignorance and trepidations surrounding this system, and they are liking what they see. With the rise of large-scale public transportation systems, specially bus and rail systems, the ability of cities to move people efficiently from place to place (even long distances) has drastically increased through increased funding from state and national levels of government. This increase in budget in recent history has been what cities have needed, and they are wasting no time in implementing their new cash intake. This has opened the door to a small, modern revolution as compared to recent years, because this has allowed the creation of many more transit stations than there have been, and the funding to continue this trend into the future. This has allowed many new users to begin utilizing the new network of public transportation, as it is now affordable and convenient for those further away from these downtown centers. It is also allowing these stations to run more often as well, making it that much more efficient to take a ride, instead of waiting on the roads to clear up.

Green thinking

Green technology and the trend towards a more sustainable society has been one of the greatest advancements in the history of public transportation. Green thinking has started a movement towards a society that is ditching their car and all of the carbon emissions that it creates, for a more sustainable way to travel. This has led to a revolution in the travel sector, where the positives again outweigh the negatives in favor of mass transit. With the modern and clean designs that accompany most transit centers being built, and the amount of day-to-day congestion that has been building over the years during rush hour in almost all major metropolitan centers, citizens are finding more and more reasons to take the bus or train than ever before.

As the historical analysis mentioned, many people have moved from the big city to close-by suburbs for economic and social reasons. But, with the advancement of sustainable thinking in the general population, people are looking for ways to best eliminate their use of fossil fuels, specially from their travel to and from work. This has sparked increases in mass transit travel in recent years not just for economic reasons, but for the social aspect as well. It is a positive thing in today's culture to live a green lifestyle, and taking public transportation is definitely seen positively.

A mobile society

In today's modern lifestyle, everything is constantly moving at a quicker and quicker pace. People today are ever-vigilant about their need for an "I need it now" society, and that especially has to do with how they travel. A century ago, one might have found all that they needed to do within an effective range of only a couple miles (because of horseback travel restrictions), but nowadays the effective range that one might need to travel on a day-to-day basis is over ten-fold of that. We travel much more than we have ever before, which is especially true for those living in the suburbs. Most people that live in suburban areas work at or around downtown centers, and travel that long distance every day. This has made quick, reliable transportation such as those provided at a transit center such as this project, an invaluable piece to a community's functionality.

Target market: Young professionals

The user-base that a project such as this depends on is that of the young professional that is just entering the job market. These are the people that are eager to make a good impression at work by being on-call and ready to help the office at a moment's notice. They want the most direct access to their workplace that they can afford in order to best serve and move up the corporate ladder as quickly as possible. At the same time, however, these are the people that have the least amount of income (most likely) within their corporate structure, as they are just starting out at or have not been at their jobs for very long. Also, these potential clients are the ones that have little-to-no savings after college and are also saddled with student debt, making owning a single family home incredibly difficult. These are the perfect clientele for the on-site living facility being proposed here.

Not only do these young professionals want to work hard and impress on the job, but they want to play hard after work. The nightlife is very sought after for those in this target demographic, especially since some of their friends will be living in that area as well. This is even more reason why those in this market need direct access to everything downtown, all of the time.

One thing that urban life does have over suburban life is the amount of people that you meet in a day is greater there than it could be in an area of limited pedestrian traffic like the suburbs. This is what an active multi-family living community such as this would be great for. With the amount of different and open amenities that a place like this would offer, the chance for these individuals that are sometimes moving from a far-off city, to meet new people and socialize. Another great opportunity in such a community is the networking possibilities that exist with living with like-minded tenants who have many of the same wants and needs that a specialized housing location like this project provides. Overall, this does more than to help just a few individuals meet new people and expand their social boundaries, it helps build and cement into each of their daily lives the feeling that they are a part of a community. This feeling of inclusion and all of the activity around the complex makes for a great place to grow as a person, and create lasting relationships with those around them.

Coon Rapids, MN

The city of Coon Rapids is a rapidly developing suburb, and is home to one of the largest commercial sectors in the area, the Riverdale mall. This sector is located directly north of the site, and offers many promising prospects for potential development, as shopping through both big box retailers and smaller, family-owned businesses are easily accessible from the site. It is also ideally situated amongst a large population of potential mass transit riders, as it is far enough from the Twin Cities to warrant special travel accommodations for riders, especially because of the large amount of back-up that almost all major roadways experience during peak hours of travel (and even some non-peak hours).

The city of Coon Rapids is no stranger to the perks of mass transit, but is still not fully embracing the technology of what it already has. The city has already dedicated a large space for the station and neighboring development to help fix the transportation problem that suburban areas like this one have. However, the city has been unable to find a solution that best fits the culture of the area and its citizens. These factors all make it the perfect case to bring the appreciation of public transportation full circle, and to create a special community to allow these citizens to realize how great this service is for them and their city, and how they might best utilize its services.

Figure 4.6

Figure 4.7

Coon Rapids - Riverdale Station

The Coon Rapids - Riverdale station along the Northstar Commuter Rail, the site of this project, is ideally located for such a design, as it acts as the “gateway to the northern suburbs” (Northstar Corridor Development Authority). The rail station is at the edge of the outer suburban cities, leading along the lines to Anoka, Ramsey, Elk River, and Big Lake. Only one other station along the Northstar Commuter Rail line has attempted to integrate it into the city’s design, but (as noted in the previous case study of The COR) because of poor insight and unfortunate timing around a financial crisis, has done quite poorly overall. This site and this station of the railway line has been set up perfectly to lead the movement towards an even greener suburban lifestyle and to set the trend on the best way to manage these complex public transportation systems by best integrating them into the city’s inner workings.

Site Analysis

Qualitative Aspects

The Northstar Rail, Coon Rapids - Riverdale Station has a very unassuming site at the moment, as only about one-thrid of the site is currently in use. The fraction in use by the station and its users is mostly comprised of a large parking lot needed to house the cars for the day, as their owners transit to and from the Twin Cities for the day. This section also contains the small cross-over structure for users to cross the tracks. This small structure is modern in appearance and is also accompanied by other, smaller structures for standing in while waiting for the train or bus.

Running along the southwest edge of the property (one of the sides of the right triangle-shaped property lines) are the railroad tracks that define one border of the property, along with the large numbers of trees in a row behind the tracks and on the residential side of the rail lines. To the north is a line of the backs of big box retailers, and to the east is the street needed to access the property, Northdale Boulevard, and the large residential area on the other side of the road from the property. The commercial to the north is made up of entirely stone buildings of brown or tan color schemes. Also, the homes to the east are in traditional suburban neighborhoods with the typical construction of that type as well.

The site itself, other than the one-third used by the station and its parking, is covered in a field of short, stubble grass, and a slightly more luscious and thicker grass around the north and east borders of the site. The ground is a bit rough, as it is not cared for at the moment, and is mostly only used by dogs and their owners to play in. The triangle shape and the flow of the train tracks do give the site some very interesting angles and views. The site is has huge potential to have a flowing, active feel to it, something highly desirable for the project type, because of this interesting site shape not being the standard square shape. The main views currently are south to the rail lines and the tree line behind it, which is also a great angle, because it is the furthest from the commercial backing to the north that is something that will have truck activity during the day and nothing to look at throughout the day.

Being an open site in a suburban area means that there is an abundance of light falling onto the site. The only source of real shade and shadow comes from the tree line separating the south residential from the rail lines, the station crossover structure, and the various trees planted

in and around the parking lot and station area. These trees scattered around the parking lot are the only major forms of vegetation that inhabit the site, as this is mostly a grassy field. There is a small cluster of trees in the south-eastern area of the site, but are small, young trees. The only area that has sustained any sort of other growth is the small depression in the northwest corner. In this area there is a small amount of shrubbery, a few wild flowers scattered about, and small taller grass that makes it difficult to navigate in the depression. The sunken area is only about five feet below the rest of the site, and it is clear that it is the only place that water really collects on the site, because of this growth of other plant-life. The water does not stay long, as it is quickly absorbed into the soil. Amongst the site as a whole, the ground maintains a more brown color, as the grass is spread out and not as dense as would be desired if the site were inhabited. The borders of the site have a ridge or berm feature that is raised about 4 feet from the average site level, and acts as a great divider from the commercial to the north and the road to the east. These berms are much more dense in grass, which makes it much greener on and around these areas. The middle of the site does show some signs of distress, as the grass and general landscape has been taken care of. The trees in the area, as well as the building elements of the area have been well maintained, however, and are still serving their users well.

With the lack of structures or major vegetation growth on the site, there is no real alteration made to the wind's path or velocity on a micro level. The time of year does, however, affect the direction that the wind comes from. As seen below with wind roses, winter winds come from the north-eastern direction, drawing form the cold Canadian air, while the summer draws from the southeast, pulling in warmer air.

As stated earlier, the only real activity on the field part of the site are dog walkers, people playing with their dogs as a park, and people from nearby neighborhoods taking a walk. However, the station and parking lot are very active during the week, and have minor activity throughout the weekend. Users park their car, either wait on the near side of the station to be taken to Ramsey or further north, or cross the rails to travel to the Twin Cities. Most users arrive only minutes before the train arrives, but a few do show up a while before their designated time and spend time reading or relaxing while they wait.

Quantitative Aspects


Figure 4.8

Soil on the site is composed of Hubbard coarse sand, which is a very clean sand and has a very organic topsoil. This soil type is a well-graded, well drained sand with little to no fines, formed in sandy glacial outwash of the Late Wisconsin Glaciation. Constructability using this soil is excellent with regards to compactibility, permeability, and shear strength. Since the soil is of such good quality for foundation work, no excess soil will be required to supplement the strength of the ground, thus saving on cost.

The Water table fluctuates depending on the season but remains relatively constant, only fluctuating a few inches annually. As stated earlier, this type of soil drains quite well both on the surface and internally, because of its sandy qualities.

Access to utilities would not be a concern for this project, as the site is within a commercially and residentially developed area. Electricity is already on-site for the pre-existing parking lot and other small-scale transit station features such as the ticketing machines and loudspeakers. Like most new construction, sewer, gas, and water would need to be brought on-site, but as stated earlier, are easily accessible. Even though there is already electricity on site for the current site, there would need to be improvements to the site's system and an increase in amount and voltage requirements for the new build.

The main vehicular traffic that this site will be concerned about is what will be happening on-site, as the train traffic will be running on the south end of the site, and busses will be running in and around the transit station. There is also a road to the east of the site, Northdale Boulevard, that has an average amount of vehicular traffic. This road is also the only access to the site via automobile, so the traffic could potentially increase as more tenants would be living in the area, as well as the potential increase in mass transit use.

Pedestrian traffic around the site is quite minimal. Most people that do venture onto the site drive there in order to use the transit system. There are, however, a few visitors every once and a while that use the wide open space that the field portion of the site provides to use as a makeshift dog park to let their dogs run around. On multiple site visits, this was the only real user of the field besides those just passing through it. The transit station, did get a few people that would walk to take the train, and would sit outside and read a book or talk with other riders while waiting for their train. This could be attributed to the fact that this portion of the site is the most developed and therefore is easier to enjoy using the space.

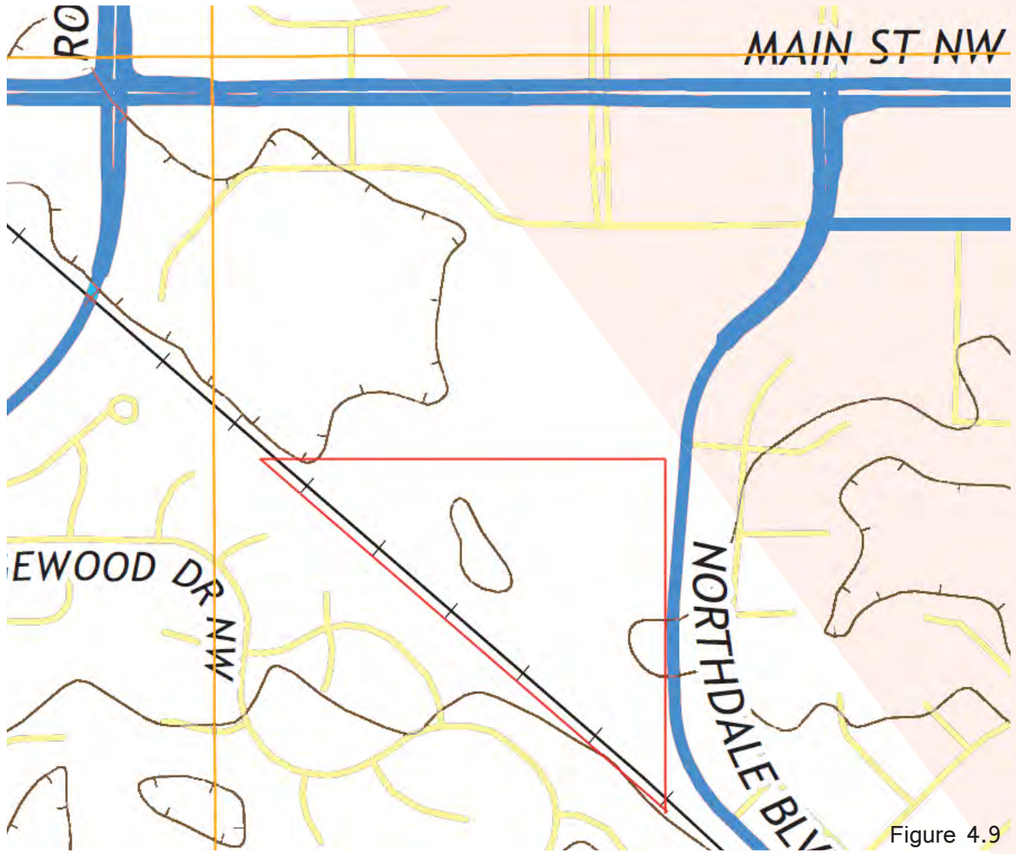


Figure 4.9

Contour Map Legend

: Major Roads
: Minor Roads
: Contour Lines
: Site Property Lines

As can be seen above, the site does not have much slope to it, besides the small depression to the northwest (shallower than 10' so not visible here) and the small berms on the north and east (also smaller than 10').

Figure 4.10

Site Aerial View and Boundaries

The site's character at the moment has a modern feel with the steel and glass structure being used by the transit station at the moment. However, beyond that scope, the site has a very empty feeling currently, as the rest is a large parking lot and an empty field that has not been maintained over the years. It is, however, at least quieter than one would think a transit station would be, with the train and busses only coming once and a while, and the traffic from the nearby street not being too busy.

Massing Around Site

Figure 4.11

This graph below illustrates the average percent humidity changes throughout the year in Coon Rapids. As is seen, the summer months tend to have a higher humidity, and the winters having a lower percentage, making for a dry winter standard for the city.

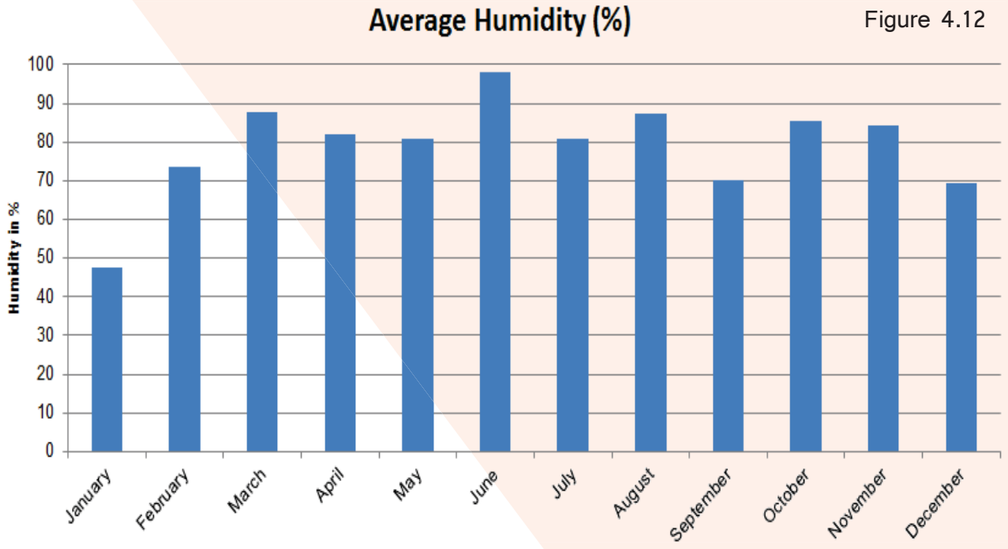


Figure 4.12

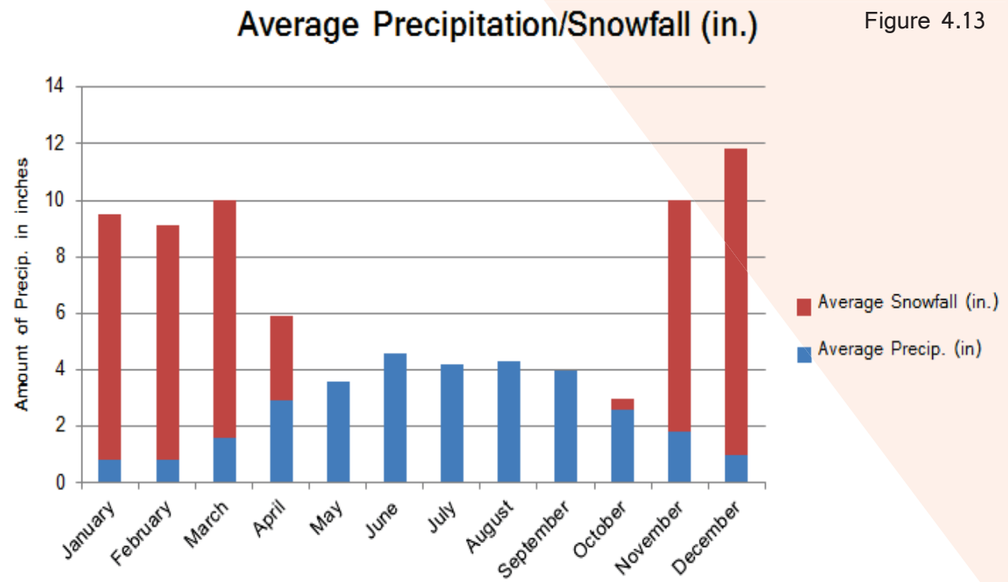


Figure 4.13

The time of year that snow starts to fall instead of rain is different every year by a large margin, and even stays longer or shorter depending on the year. As evidenced by the chart above, there is a large amount of snowfall each year (on average) compared to the amount of rain, and a lot of the time comes down in large bursts instead of in low amounts steadily throughout.

The temperature in Coon Rapids, MN fluctuates quite drastically throughout the year, from an average of 70.5 degrees to a low of 11.4. This is further accentuated by the fact that winters in the area have much lower wind chills than are measured by temperature, and make them feel much colder.

Figure 4.14

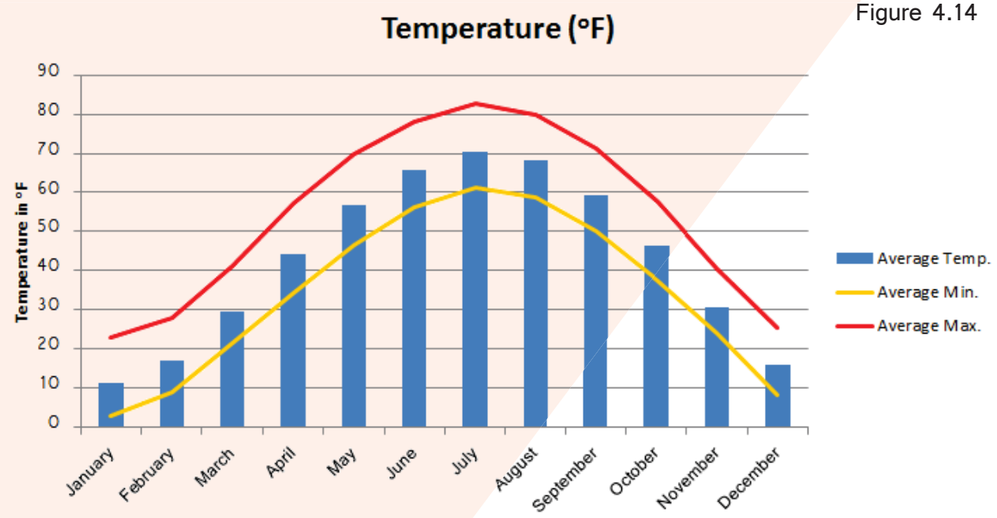
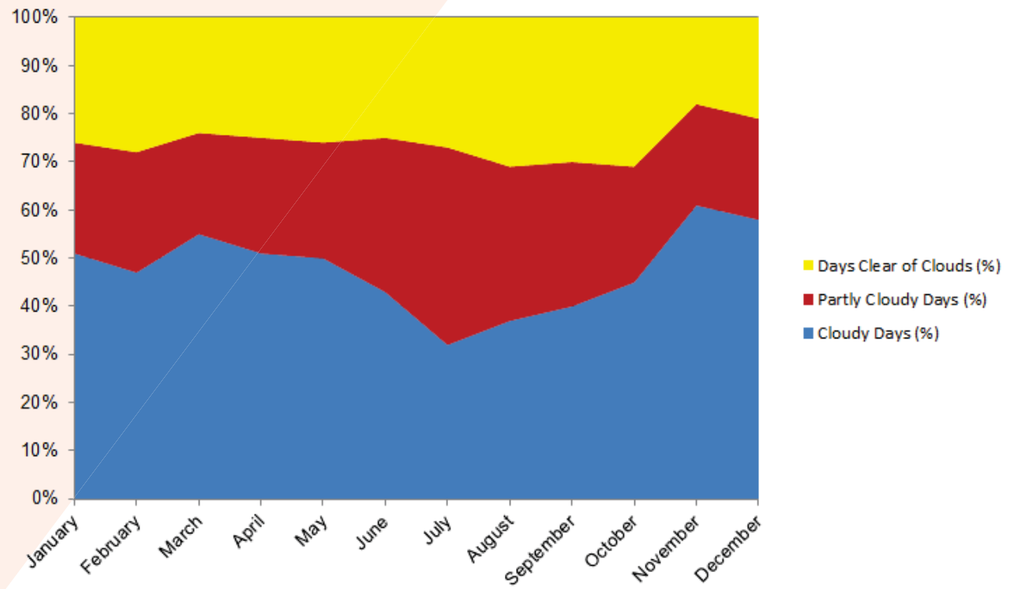


Figure 4.15



Clear days are considered days that had 30% or fewer cloud cover, partly cloudy up to 70%, and anything above being considered a cloudy day. As evidenced above, summer days tend to be much clearer, while winter months have a higher than average amount of cloud cover.

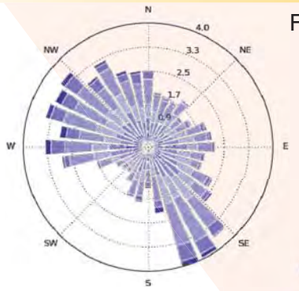


Figure 4.16

March Wind Rose

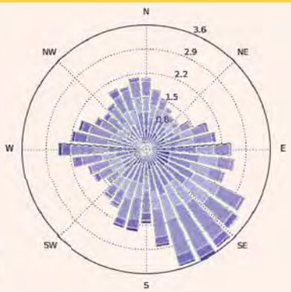


Figure 4.17

June Wind Rose

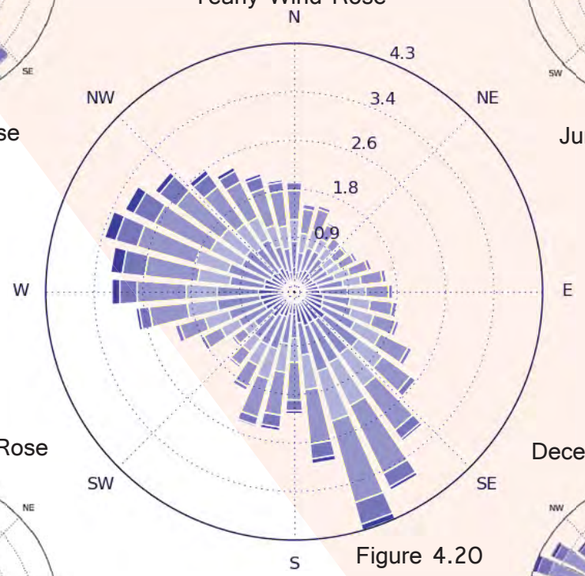
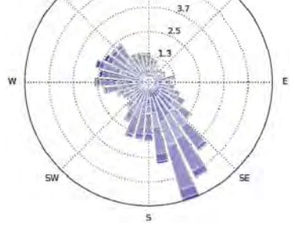
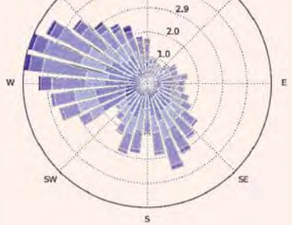


Figure 4.20



September Wind Rose

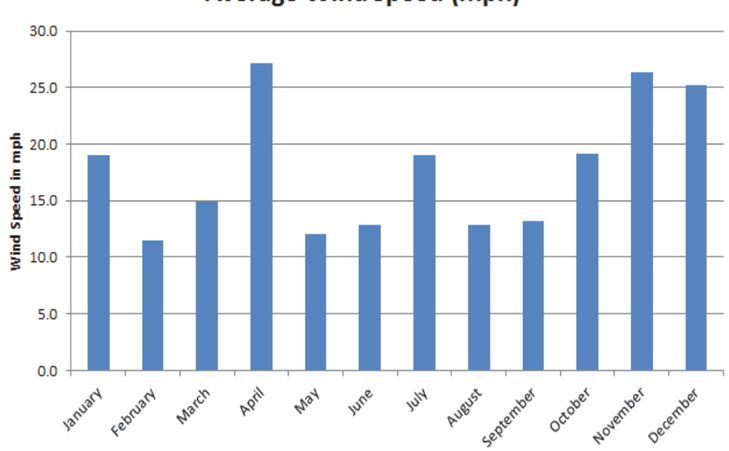


December Wind Rose

Figure 4.18

Figure 4.19

Figure 4.21



With prevailing summer winds from the southeast and prevailing winter winds from the west-northwest, the average wind speed in Coon Rapids is 7.3 mph. There percent of calm (no wind) is 19.2%.

Sun Path Diagram

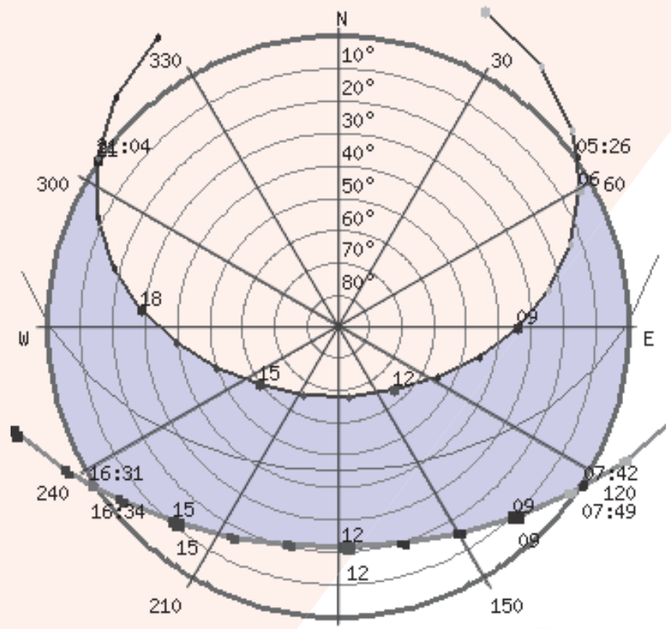


Figure 4.22

Site Photo Grid

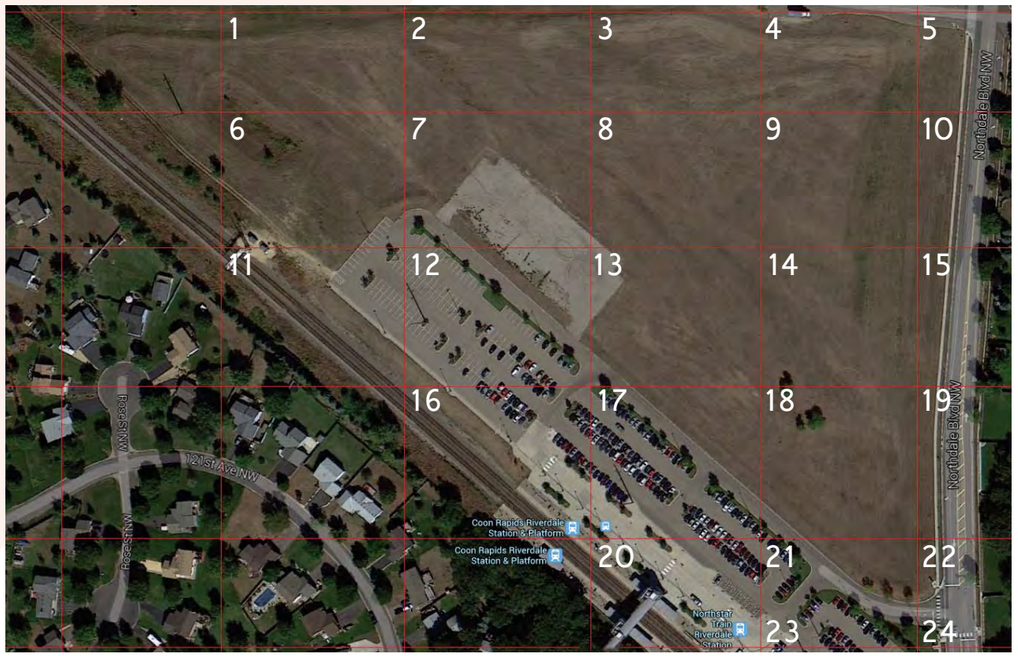


Figure 4.23


Figure 4.24

Node 5 - Facing North


Figure 4.25

Node 5 - Facing East


Figure 4.26

Node 5 - Facing South


Figure 4.27

Node 5 - Facing West


Figure 4.28

Node 20 - Facing North


Figure 4.29

Near Node 24 - Facing Northwest

Building Program

Space Allocation

Residential

Public

Lobby	1,000 s.f.
Mail	100 s.f.
Administrative Offices	1,500 s.f.
Daycare Service	1,625 s.f.
Pet Daycare Service	1,625 s.f.
Fitness Center	2,000 s.f.
Club Rooms	1,000 s.f.
Outdoor Courtyard	26,000 s.f.
Circulation and Mechanical	45,000 s.f.

Private

Studio Apartments	
@ 650 s.f. each	13,000 s.f.
One Bedroom Apartments	
@ 850 s.f. each	93,500 s.f.
Two Bedroom Apartments	
@ 1,150 s.f. each	80,500 s.f.
	Total: 266,850 s.f.

Transit Station

Public

Quiet/Open Space	7,500 s.f.
Restaurant/Dining	4,000 s.f.

Private

Bathrooms	350 s.f.
Mechanical	500 s.f.
	Total: 12,350 s.f.

Shared Outdoor Space

Parking Structure	200,000 s.f.
Outdoor Plaza	22,000 s.f.
Bike Storage	100 s.f.
Dog Park	20,000 s.f.
Park/Open Space	Remainder of site
	Total: 242,100 s.f.

Overall Total: 521,300 s.f.

Adjacency Matrix

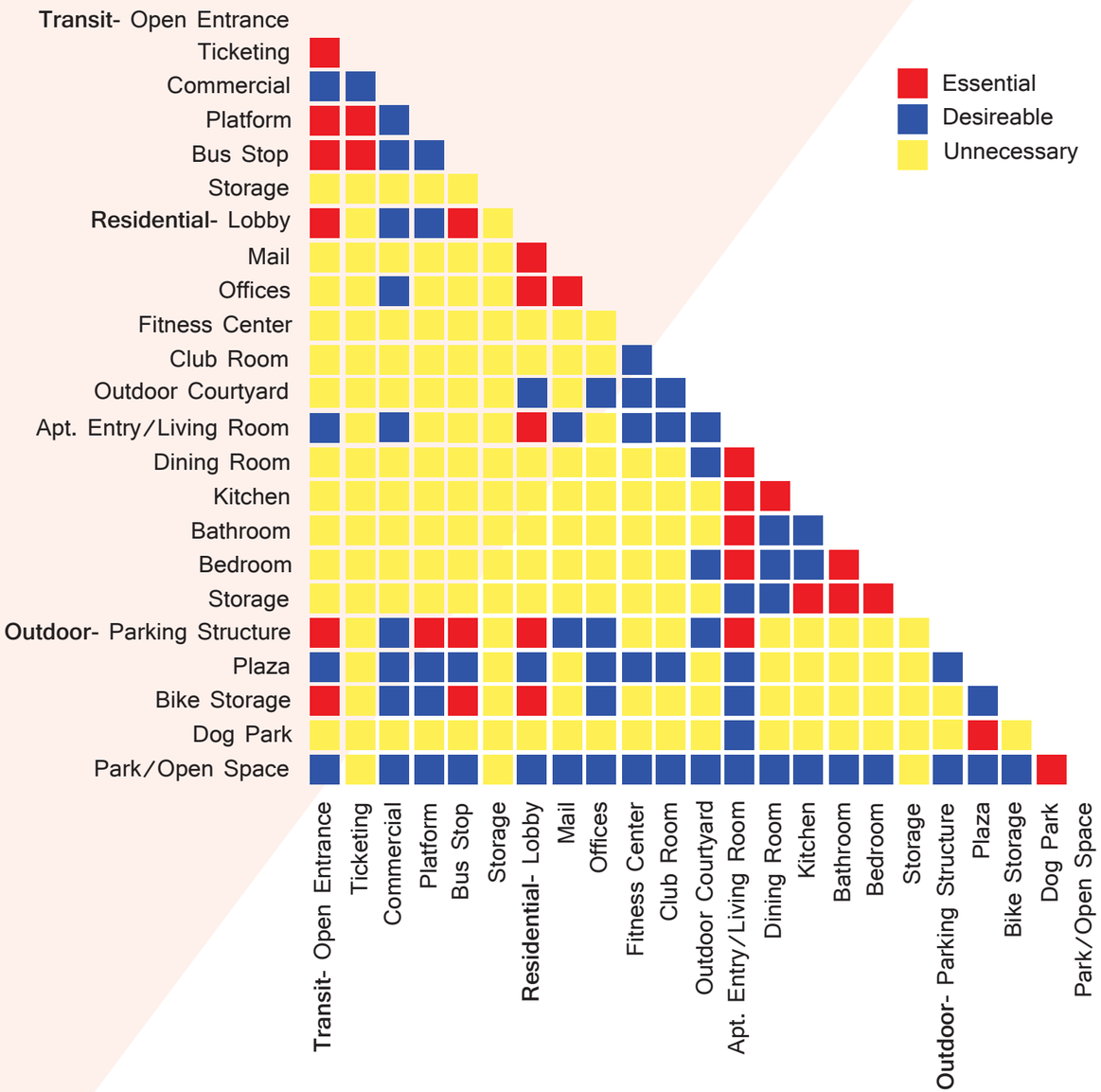


Figure 4.30

Peak Usage

Residential	
Public	
Lobby	Moderate use throughout
Mail	Low use throughout
Administrative Offices	8 a.m.-5 p.m.
Daycare Service	8 a.m.-5 p.m.
Pet Daycare Service	8 a.m.-5 p.m.
Fitness Center	6 a.m.-8 a.m., 6 p.m.-10 p.m.
Club Room	6 p.m.-12 p.m.
Outdoor Courtyard	6 p.m.-12 p.m.
Circulation and Mechanical	Moderate use throughout
Private	
Studio Apartments	6 p.m.-8 a.m., all day weekends
One Bedroom Apartments	6 p.m.-8 a.m., all day weekends
Two Bedroom Apartments	6 p.m.-8 a.m., all day weekends
Transit Station	
Public	
Ticketing Area	7 a.m.-9 a.m., 5 p.m.-7 p.m.
Quiet/Open Space	7 a.m.-9 a.m., 5 p.m.-7 p.m.
Commercial	7 a.m.-9 a.m., 5 p.m.-10 p.m.
Private	
Storage	Low use throughout
Mechanical	Low use throughout
Shared Outdoor Space	
Parking Structure	7 a.m.-9 a.m., 5 p.m.-7 p.m.
Outdoor Plaza	7 a.m.-9 a.m., 5 p.m.-10 p.m.
Bike Storage	7 a.m.-9 a.m., 5 p.m.-7 p.m.
Dog Park	5 p.m.-7 p.m.
Park/Open Space	7 a.m.-9 a.m., 5 p.m.-7 p.m.

Interaction Net

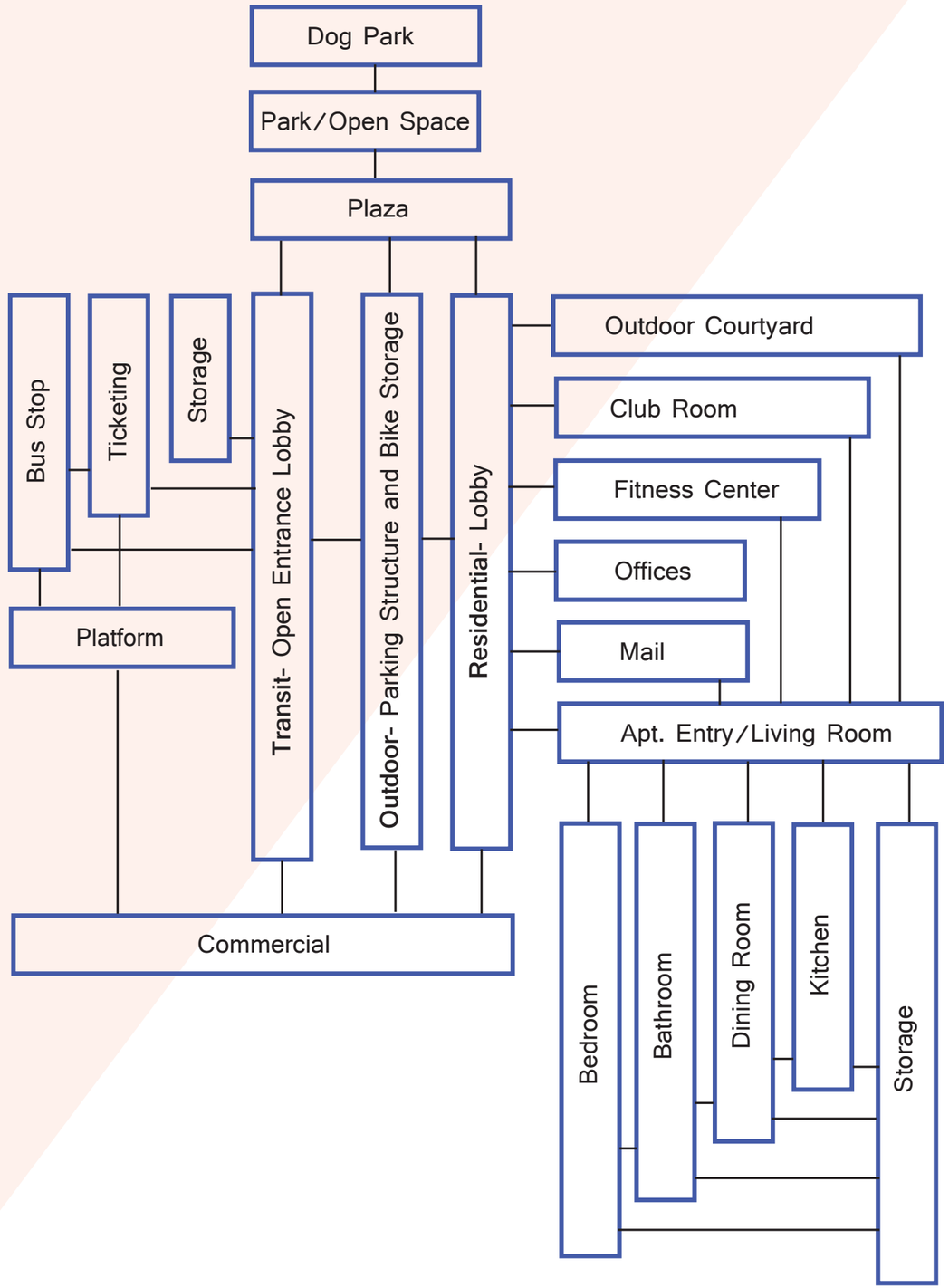


Figure 4.31

Design Process

15.18 acres

Welcome to the Web site of
Anoka County
Minnesota

Figure 5.1

Property Account Summary

Current General Information	
Property ID	08-31-24-14-0030
Situs Address	UNASSIGNED SITUS , COON RAPIDS, MN 00000-0000
Property Description	TRACT A REG LAND SURVEY NO 209 SUBJ TO EASE OF REC
Last Sale Price	2,272,970.00
Last Sale Date	03/25/2003
Last Sale Document Type	WDEE WARRANTY DEED
Linked Property Group Position	
Status	Active
Abstract/Torrens	All Torrens

Parties	
Role	Name
Owner	ANOKA COUNTY REGIONAL RAILROAD AUTHORITY

Document Recording Process Dates	
Abstract Documents Have Been Recorded Through	10/03/2014
Abstract Documents Have Been Mailed Through	10/03/2014
Torrens Documents Have Been Recorded Through	10/03/2014
Torrens Documents Have Been Mailed Through	10/03/2014

Active Certificates Of Title		
Type	Certificate Number	Certificate Date
CRTST CERTIFICATE OF TITLE - STANDARD	98439	04/09/2003

Documents Recorded Within 30 Days Of "Recorded Through" Dates Above			
Type	Abstract/Torrens	Recorded Number	Recorded Date
No Documents Found			

Property Characteristics	
Lot Size	IRREGULAR

* Lot Size: Approximate lot size in feet, clockwise beginning with the direction the lot faces

Tax District Information	
City Name	COON RAPIDS
Watershed	COON CREEK WATERSHED
School District Number and Name	ANOKA-HENNEPIN SCHOOL DISTRICT #11

Property Classification		
Tax Year	Classification	
2014	5E-Exempt Properties	
2013	5E-Exempt Properties	

Property Values		
Tax Year	Description	Amount
2015	Est Market (MKTTL)	3,426,900
2015	Market Value Prior to Hstd Excl. (TMVP)	3,426,900
2015	Est Market Land (MKLND)	3,426,900
2015	Taxable Market (TMTV)	3,426,900
2014	Market Value Prior to Hstd Excl. (TMVP)	3,426,900
2014	Est Market (MKTTL)	3,426,900
2014	Taxable Market (TMTV)	3,426,900
2013	Taxable Market (TMTV)	3,426,900
2013	Est Market (MKTTL)	3,426,900
2013	Market Value Prior to Hstd Excl. (TMVP)	3,426,900

Tax Amounts for M1PR		
Tax Year	Description	Amount
2014	Total Tax Amounts - Before Payments	5,059.90
2014	Special Assessments (Included in Total)	5,059.90

Payment History for Past Three Years				
Date Paid	Tax Year	Principal	Interests, Penalties and Costs	Amount Paid
04/01/2014	2014	5,059.90	0.00	5,059.90
04/02/2013	2013	5,059.90	0.00	5,059.90
05/15/2012	2012	5,059.90	0.00	5,059.90

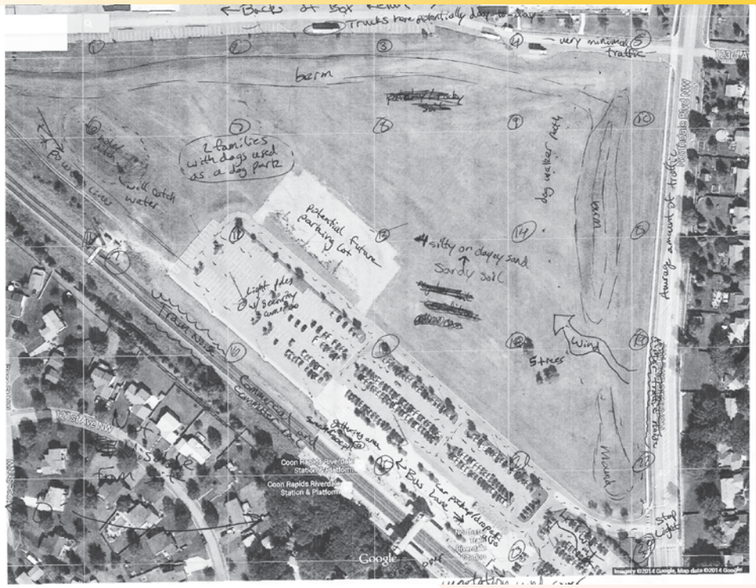
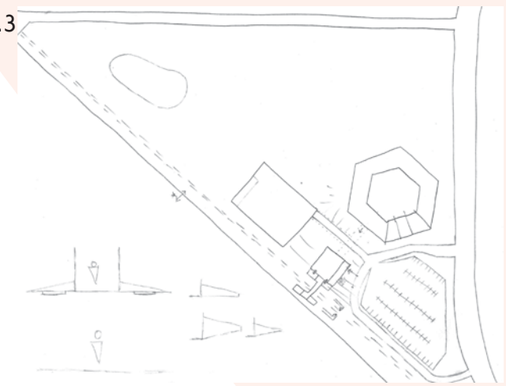


Figure 5.2

Site Analysis Sketch

Figure 5.3



Beginning Site Design Sketch

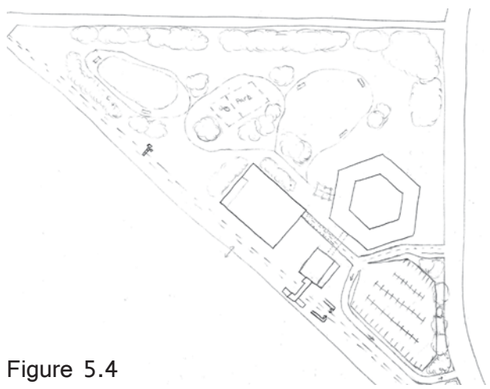


Figure 5.4

First Site Design Sketch

Final Site Design Sketch

Figure 5.5

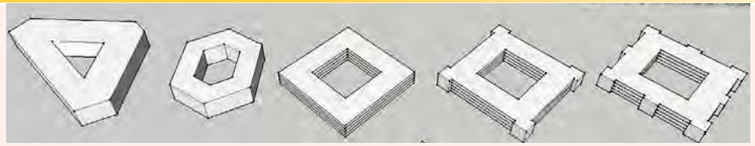


Figure 5.6

Apartment Design Iterations

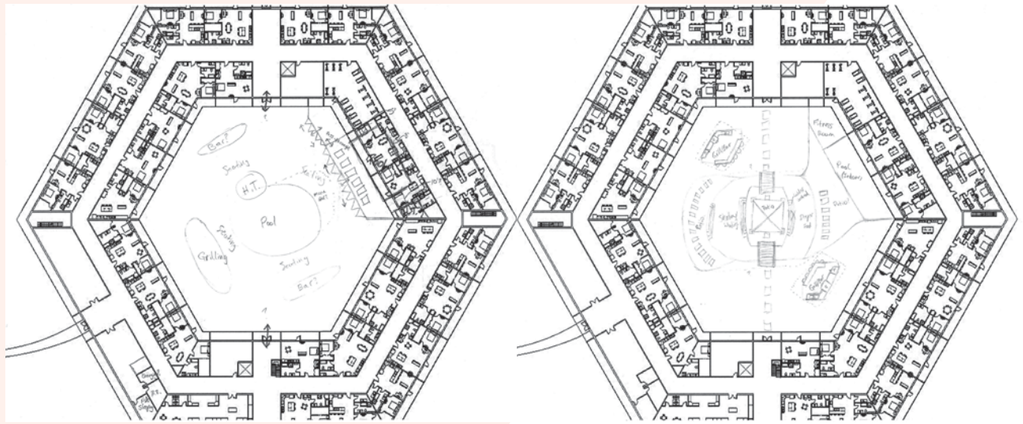


Figure 5.7

Figure 5.8

Courtyard Design Sketches

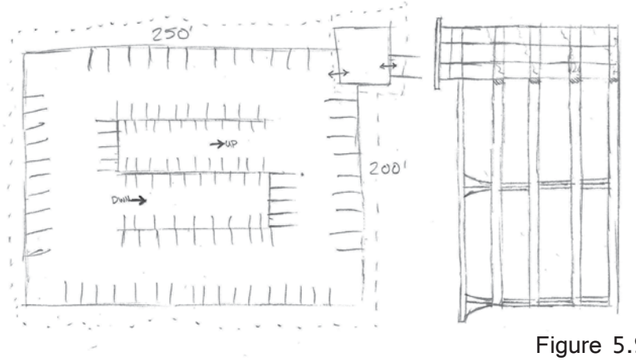


Figure 5.9

Parking Structure Design Sketch

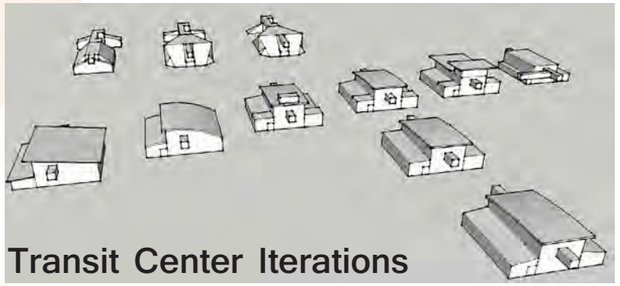


Figure 5.10

Figure 5.11

Transit Center Roof Design

Design Solution

Typology: Transit Center and On-Site Residential Community
Size: Apartments - 266,850 ft^2 and Transit Center - 12,350 ft^2

Performance Analysis

Response to the site:

One of the greatest attributes that this site has to offer was the vast amount of space that it provides. This space was harnessed by preserving the unique open/field quality that suburban parks tend to offer, while also bringing a more human-scale environment with the urban park and walkways between the three structures. A major point of this project was to connect with potential users of the transit center, and to help garner attention for the on-site residential community. A connection was provided for the nearby neighborhood of single-family homes to better connect people to both the site and all of the amenities that it has to offer. The duality of the site (both suburban and urban functionality) that it has to offer helps to provide a bridge between the downtown epicenter that the train is connected to, while also bringing even more functionality to the site as residents and users have access to all varieties of open green space and parks.

Response to the typological research and program:

Through research, it was determined that this thesis was economically feasible when regarding case studies such as the massive suburban sprawl that has been occurring around Dallas, Texas utilizing the D.A.R.T system. The major success of that transit system is apparent both in its utilization numbers by the public and the vast amount of economic and building development centered around areas that house transit hubs very similar to the one designed in this thesis. Another important aspect of research was determining what types of apartment units and amentities would this thesis be compared to if potential tenants were also researching units downtown. Through this study, it was determined that the units needed to have high-end finishes in order to compete with their downtown counterparts, while also providing larger open-concept designs that would lend itself better to entertaining and living in general. Also required to put this building on top was a vast assortment of amenities that no downtown complex would ever be able to provide, especially on the scale that the indoor courtyard, pools, and vast amounts of outdoor green space that this site has offer for tenants. Finally, the transit center was a major focus of this thesis, as it was really what the ultimate draw for tenants was to live there. The transit center is open enough to accommodate any activity users of the system would need while waiting for their train or bus. The station also offers things that both tenants and park & ride users would need inside, connectivity to downtown at a convenient location (close to large commercial shopping center and larger neighborhoods of residential) while also providing food and drink for riders before and after their rides, and the space to enjoy it.

Response to goals and project emphasis:

A large goal of the site was to have a very interconnected community of tenants living on-site with this transit center. A major way that this was accomplished was the use of a very large inner courtyard space that provides a multitude of amenities (as well as a fair number of indoor ones as well) to get users to venture out of their units and visit with each other. With the base connection of all living next door to this transit center and most of the tenants taking advantage of that system would provide a groundwork for them to start a dialogue, as they all have similar experiences sharing this public system. Another large emphasis with this project was that the transit center would be fully functional for both visitors and tenants next door to it. This was accomplished by creating a very large, open space that had a more urban feel with very clean lines to encourage use of the station, and was away the notion that public transportation was in any way dark and/or dirty, a notion that is finally begin to fade away from the public mind set. The large, open, and multi-functional spaces are not just a feature for the interiors of this project, but the exterior spaces as well. The outdoor plaza and water feature connected to the transit center is just another space that provides more versatile space for people to enjoy their wait at the station and to encourage other public uses as well to bring about more visitors to the site and visibility of this open and modern transit center.

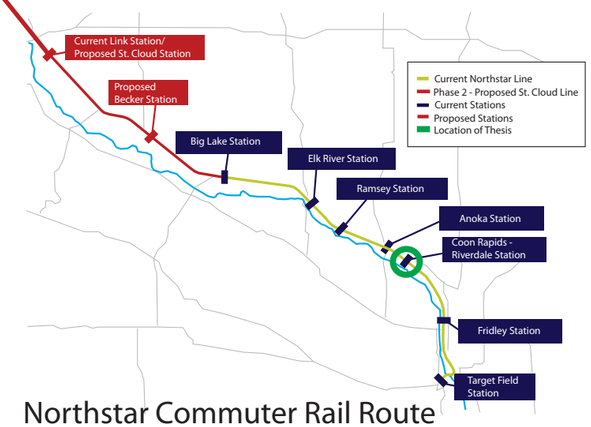
Materiality was another important feature of this thesis, as this is what is the most basic and deep connection to a downtown environment that a suburban building can bring. A coarse limestone pattern was chosen to match the stone materiality that best exemplifies downtown environments, as well as to use the stone native to Minnesota and many of its downtown Minneapolis and St. Paul buildings. The large wood framing and columns used in the transit center are another call to the downtown building style, as these building typically bring these two materials together. The wood also helps to create a much more hospitable space in such a large space, while adding intrigue to the space at the same to bring even more visual interest in the space. The site was a key element of this thesis project, as a large site was selected, and the fact that it was what would best connect the built elements together. The site provides a dual functionality to visitors, as it has two very distinct zones at either end. Near the transit station is a much more human scale site plan, with pathways lined with trees and urban lamp posts, with some more intimate spaces for picnics or smaller-scale outdoor activities. In contrast, the site to the North is a much more suburban park with winding paths, clusters of trees scattered about, lake and stream features throughout, and a dog park to accommodate for those users that were previously using the site as it is now (an empty field), for play with their dogs. These features gives visitors and tenants the best of both worlds, and provides yet another feature that downtown units would never be able to give their tenants.

Installation

Figure 5.12

This thesis examines how architecture can make mass transit more accessible and desirable to the public, while also taking the considerations of the public to mould the design into a more improved form and function. Specifically, it examines how creating downtown areas accessible through public transportation and creating an on-site living population would enhance the lives of those that would be using the system.

A key focus was to create a community of these on-site mass transit commuters that has ways of connecting amongst each other, while also connecting with the urban and suburban communities it connects to. This transportation hub and multi-family living complex in the suburbs also looks to enhance the image of public transportation to that of an advanced transportation system that is both safe and reliable for the public.



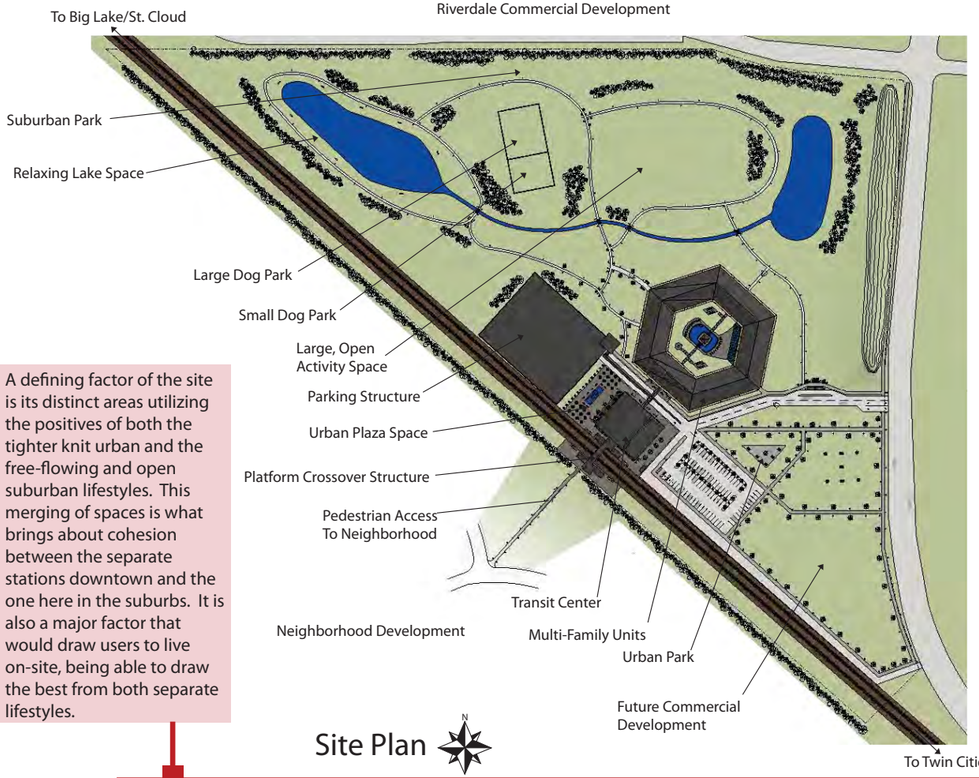
Northstar Commuter Rail Route

A NEW WAY TO CONNECT TO TRAVEL

Northstar Commuter Rail Community

Coon Rapids, MN

Figure 5.13

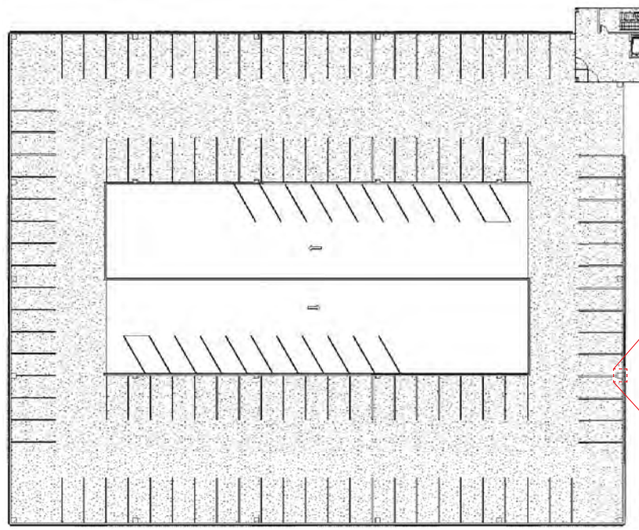


A defining factor of the site is its distinct areas utilizing the positives of both the tighter knit urban and the free-flowing and open suburban lifestyles. This merging of spaces is what brings about cohesion between the separate stations downtown and the one here in the suburbs. It is also a major factor that would draw users to live on-site, being able to draw the best from both separate lifestyles.

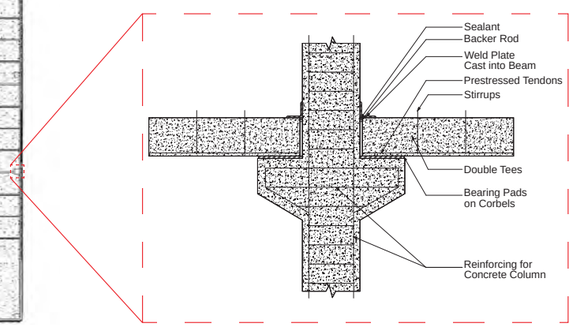
Site Plan

Urban Skywalk and Parking Garage

Active Urban Sidewalk Between Apartments and Transit Center



Parking Garage Floor Plan Scale: 3/8" = 10'-0"



Pretopped Tee- Haunch Bearing Detail Scale: 5/8" = 1'-0"

East Parking Garage Elevation

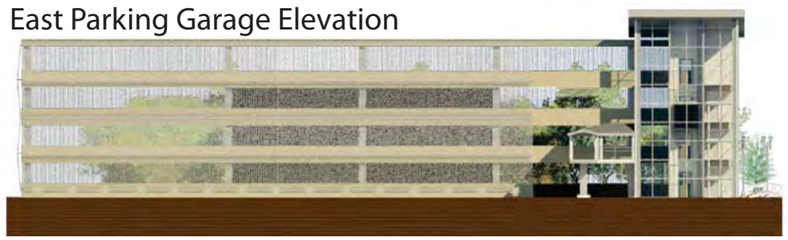
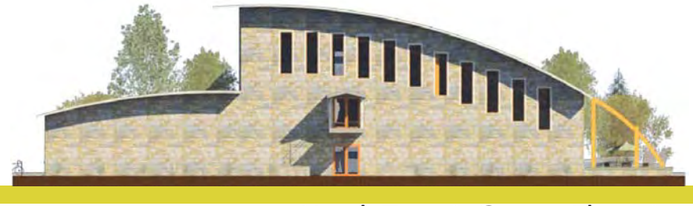


Figure 5.14

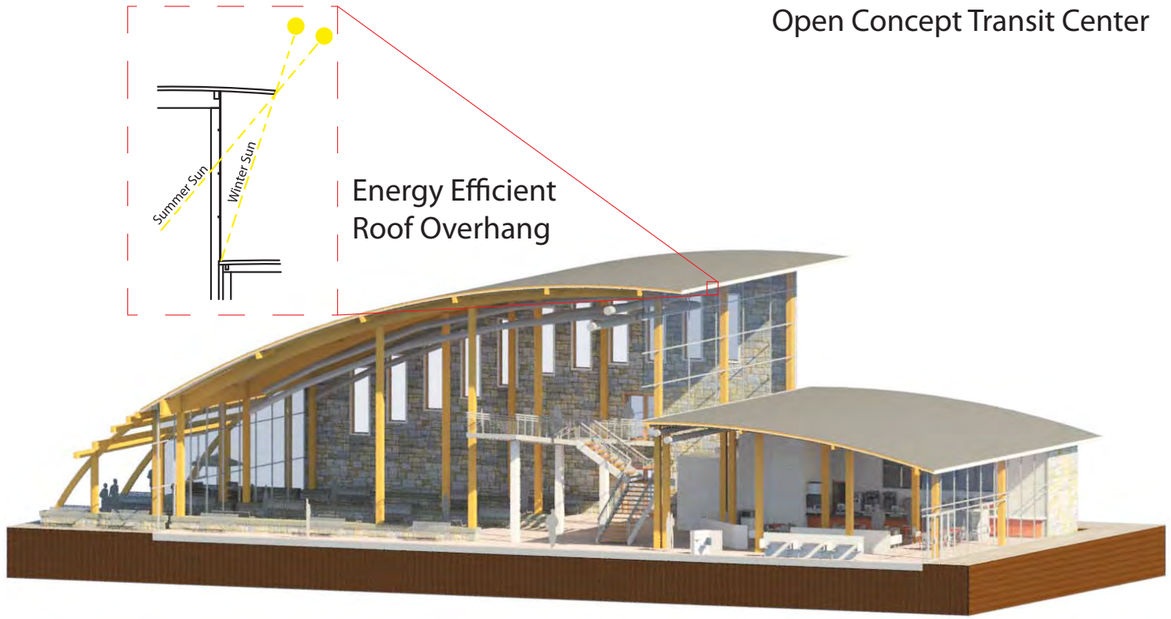
Relaxing Urban Transit Center Plaza



North Transit Center Elevation

Open Concept Transit Center

Parking Structure and Apartment from Suburban Park

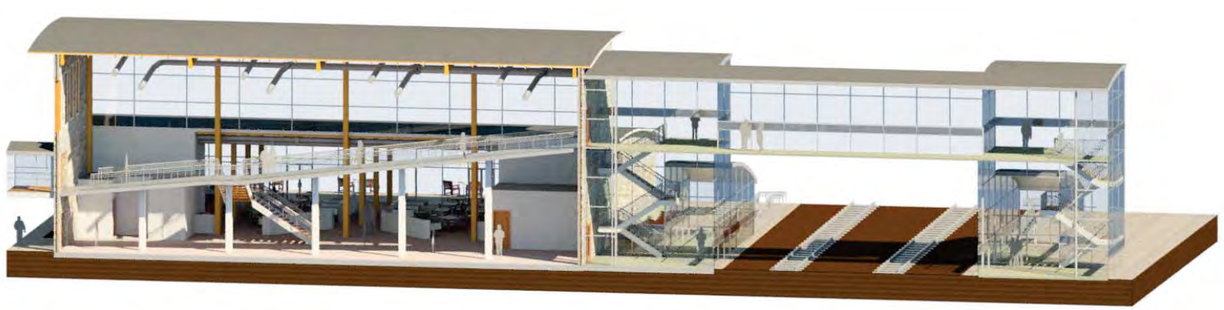


Transit Center Transverse Section Perspective

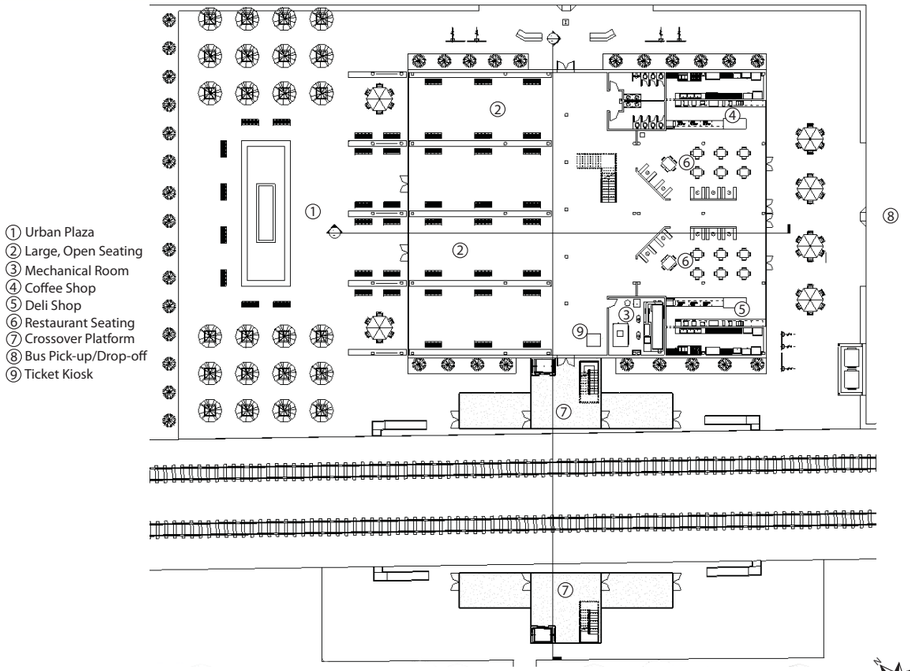
Figure 5.15

Transit Center Skywalk to Platform

The most important feature of the transit center was that it needed to be functional for many different types of users. Those that would be using the site as a park-and-ride service, or those living on-site both need to be catered to. The space is open in both height and floor space to accommodate wide ranging uses for those that would get to the station early and need to sprawl out somewhere. There is also a lower and more confined space with the coffee shop and deli seating areas that lends itself to singular work and eating. There are even multiple outdoor spaces for users to visit that are both large and public or small and more secluded.

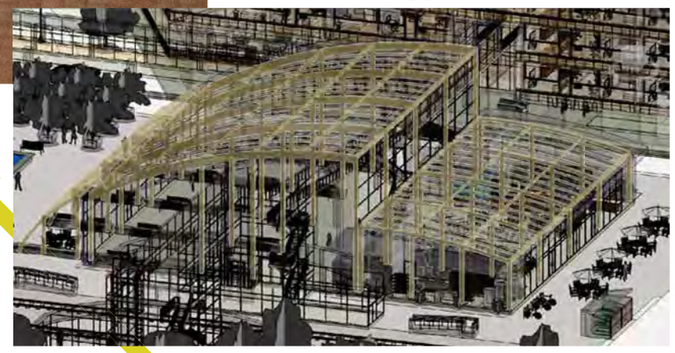


Transit Center Longitudinal Section Perspective

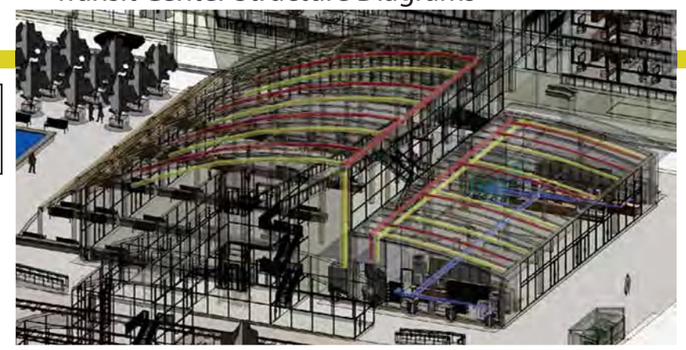


Transit Center Floor Plan

Scale: 1/2 = 10'-0"

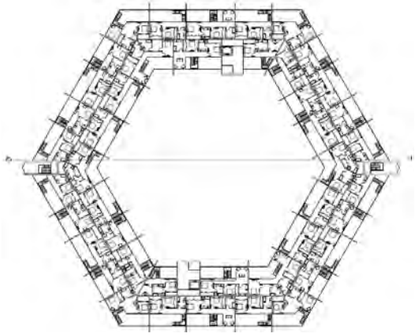


Transit Center Structure Diagrams

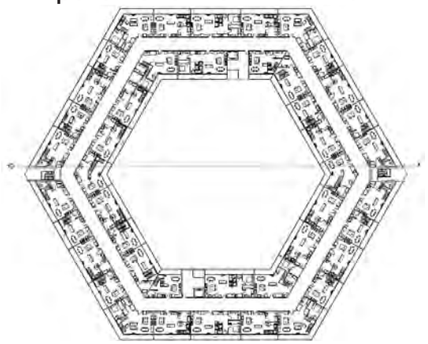


Transit Center HVAC and Plumbing Diagram

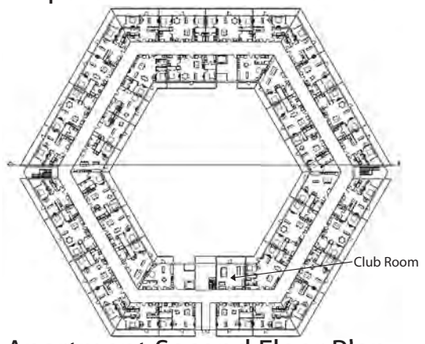
Figure 5.16



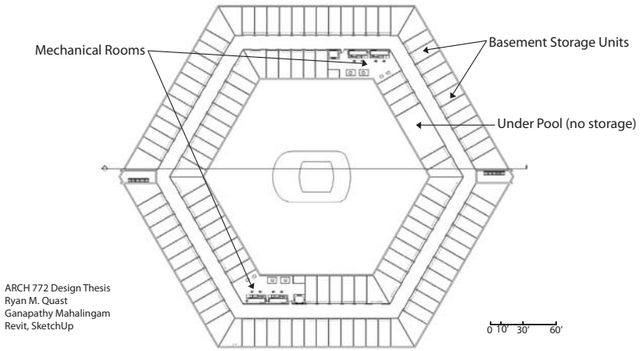
Apartment Fifth Floor Plan



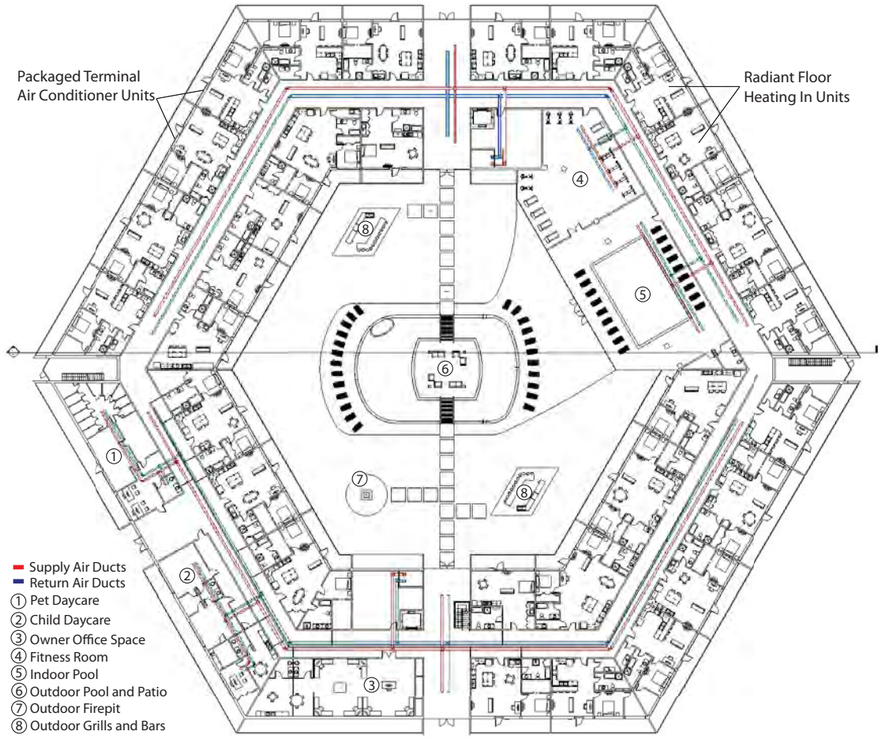
Apartment Fourth Floor Plan



Apartment Second Floor Plan

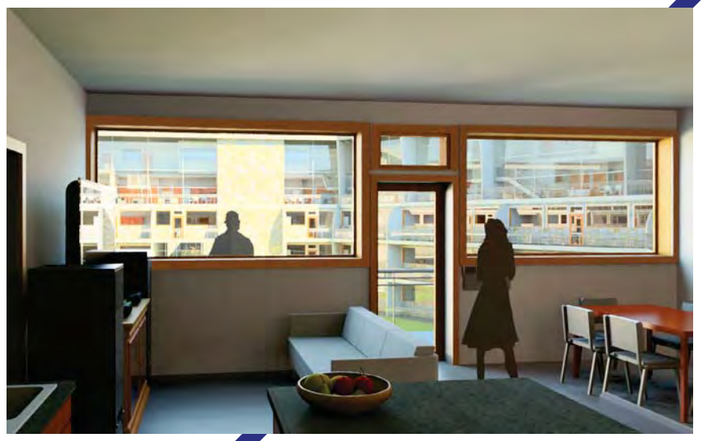


Apartment Basement Floor Plan

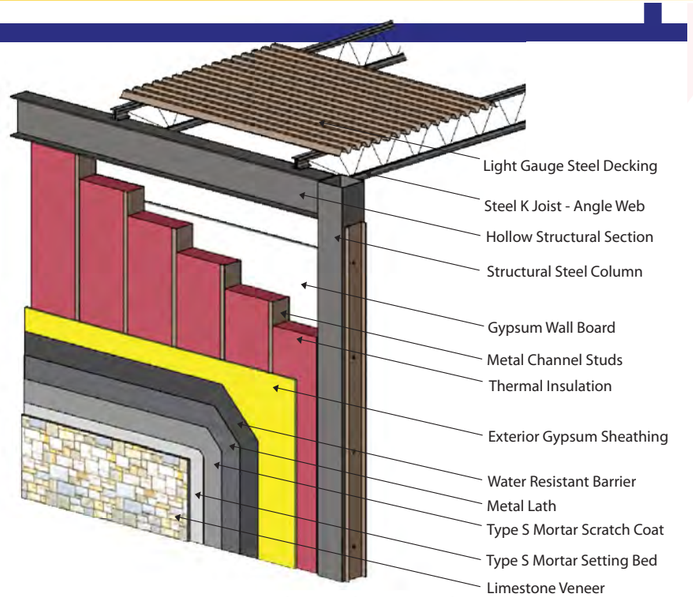


Apartment First Floor Plan with HVAC

Scale: 3/8" = 10'-0"



Modern Standard Unit Layout



Stone Veneer on Metal Studs Detail

Open 2-Story Unit Looking Over Park

These modern apartment units define open living plans and are designed to attract young professionals looking to stay connected to their jobs downtown at a moment's notice, and their friends and night life downtown as well. The courtyard and communal spaces are meant to foster a community environment amongst the tenants. The style of the apartments reflect the style of modern downtown living with the space and price only available from living in a suburban area, giving these professionals more financial freedom. All standard units are also equipped with PTAC units to give tenants better control over their climate, as well as radiant floor heating for the most energy efficient heating and cooling of the units

Active and Social Interior Courtyard

Open Coffee Shop Design

Quiet Suburban Park, Lake and Path

North Apartment Elevation

Interior Courtyard and Apartments Section

Figure 5.18

Thesis Appendix

Reference List

City of Raleigh. (2014, September 30). Union Station: Raleigh's Multi-Modal Transit Center. Retrieved from City of Raleigh: http://www.raleighnc.gov/home/content/PlanUrbanDesign/Articles/UnionStation.html

Dallas Area Rapid Transit. (2014). About DART. Retrieved from DART: https://www.dart.org/about/aboutdart.asp

Flaherty & Collins Properties. (2014). Retrieved from The Residence at the COR: http://flco.com/company-properties/residenceatthecor/

Hagen, E. (2013, September 21). Ramsey luxury apartment building open for tenants. Retrieved from ABC Newspapers: http://abcnewspapers.com/2013/09/21/ramsey-luxury-apartment-building-open-tenants/

Hiawatha Flats. (2014). Floor Plans. Retrieved from Hiawatha Flats: http://www.hiawathaflats.com/FloorPlans

Light Rail Progress. (2000, April 18). Dallas Light Rail Sparks Development Boom. Retrieved from Light Rail Now!: http://www.lightrailnow.org/features/f_000003.htm

Light Rail Progress. (2000, August). Dallas: Light Rail Fuels Anti-Sprawl Urban Boom in Suburbs. Retrieved from Light Rail Now!: http://www.lightrailnow.org/news/n_dal004.htm

NCDA. (2010). Spotlight on Coon Rapids - Riverdale. Retrieved from Northstar Corridor: http://www.northstartrain.org/station_coonrapids.html

Northstar Corridor Development Authority. (2010). Spotlight on Cood Rapids - Riverdale. Retrieved from Northstar Corridor: http://www.northstartrain.org/station_coonrapids.html

Oaks Properties LLC. (2011). Floor Plans. Retrieved from Oaks Hiawatha Station: http://www.oaksproperties.com/Profile_Floor.asp?AID=17441&title=Floor

Station 38 Apartments. (2014). Floor Plans. Retrieved from Station 38 Apartments: http://www.station38apartments.com/FloorPlans

Suarez, L. (2008, July 22). What Should The Multi-modal Transportation Center Be Like? Retrieved from The Raleigh Connoisseur: http://dtraleigh.com/2008/07/what-should-the-multi-modal-transportation-center-be-like/

Suarez, L. (2010, April 26). Multimodal Station Will Be Raleigh Union Station, Report Summarized. Retrieved from The Raleigh Connoisseur: http://dtraleigh.com/2010/04/multimodal-station-will-be-raleigh-union-station-report-summarized/

The Metro Apartments. (2014). Floor Plans. Retrieved from The Metro Apartments: http://www.themetroapartments.com/FloorPlans

Doyle, P. (2013, December 17). Ridership grows but subsidies stay high on Northstar commuter line. Retrieved from Star Tribune: http://www.startribune.com/local/north/236136121.html

Previous Studio Experience

Studio	Year	Professor	Projects
Arch Design Studio I	Fall 2011	Rhett Fiskness	Tea House Boat House
Arch Design Studio II	Spring 2012	Daryl Booker	Dance Studio Birdhouse Dwelling
Arch Design Studio III	Fall 2012	Steve Martens	Mortuary Chapel YMCA Lodge
Arch Design Studio IV	Spring 2013	Milton Yergins	Interpretive Center Restaurant/School
Arch Design Studio V	Fall 2013	Don Faulkner	High Rise
Arch Design Studio VI	Spring 2014	Steve Martens	Adaptive Re-Use
Arch Design Studio VII	Fall 2014	Ganapathy M.	Research - App
Arch Design Studio VIII	Spring 2015	Ganapathy M.	Thesis Design

Personal Identification

Picture:

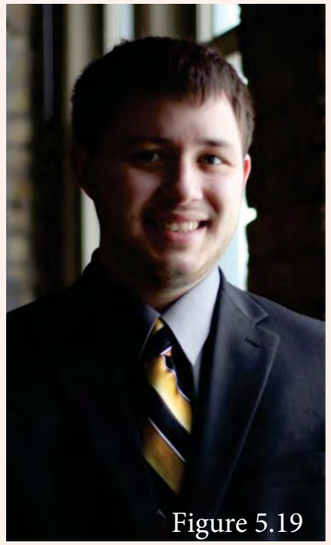


Figure 5.19

Permanent Address:
1147 137th Lane NW
Andover, MN 55304

Telephone Number:
(763)-354-4273

Permanent E-mail Address:
ryan.m.quast4@gmail.com

Hometown:
Andover, Minnesota

Inspirational Quote:
"Always remember: your focus determines your reality"
-Jedi Master Yoda